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THE RACIAL HISTORY OF INDIA



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PREFACE

India is a living Museum of Races. No doubt no people is unmixed except in some remote corners of the earth. Every nation is a blend of different racial elements. But in this country different races live together in stratified orders with intermingled intruding bands between them in one pulsating human mosaic. Caste formation has been the sequence to demarcate the racial distinctions. Cultural intercourse and the marches of conquering armies for millenniums have not been able to obliterate all the distinguishing racial marks and amalgamate and fuse them into one undifferentiable mass. Yet unfortunately no racial history of India has been written though materials abound. Indian racial question is a fascinating puzzle of great absorbing intellectual interests as its solution will solve many baffling and mysterious riddles of racial migrations of mankind. In this book I have attempted to discover the integral components of our racial complex with their historical background. There may be many controversial points that have here been summarily dealt with which may not find ready acceptance in many circles. I have simply presented the problems before the scholars for their discussions and some of their solutions I have thought reasonable. If they are to be accepted corroborating evidence will be welcome whenever necessary. If they are to be rejected the basic foundation on which the whole structure has been built upon has to be systematically undermined with shattering logical explosives. If main issues prove to be correct, a few small errors which are inevitable in such an undertaking can easily be rectified. If it evokes impelling interests among scholars, my purpose will be served. I invite their constructive criticism—no meaningless jeer or empty applause.

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THE RACIAL HISTORY OF INDIA

1. PHYSIOGRAPHY OF BHARATAVARSHA

Some billions of years ago a big star, bigger than our sun, passed by our sun. Their mutual gravitational pulls raised a large tide in our sun. And as the star passed away into distance, it left a cigar-shaped gaseous matter torn from our sun. The cigar-shaped gaseous filament cooled into separate masses—the planets. **Mercury** is the smallest planet near the sun. Similarly is the shape of **Pluto** at the other end. **Jupiter** is the largest mass in the centre. The gaseous matter being condensed formed into planets round our sun. **Mercury** is too small to prevent gases from escaping into space. The sun's pull has reduced **Mercury** to showing always the same face to the sun, and the planet's day is equal to its year about 88 days. **Venus** is larger. Its dark side has a temperature of -25°C which indicates it has some atmosphere; but it is devoid of oxygen and has little water-vapour. The **Earth** is bigger. To an observer on the moon, it would appear at full earth forty times as bright as full moon to us with fleecy areas of cloud over a blue ground. From **Venus** the **Earth** would appear at its brightest six times as bright as **Venus** at its brightest appears to us; the moon would look as bright as **Jupiter**; and the **Earth** and the **Moon** would look like twin planets—the **Earth** bluish and the **Moon** yellowish. **Mars** is smaller than the **Earth**, being 4,215 miles in diameter. A body weighing 50 kilos on **Earth** would weigh 19 kilos on the **Mars** which presents a ruddy disk. **Mars** has 15 p.c. of Oxygen and 5 p.c. of water vapour of the earth's atmosphere. Its day is 24 hours, 37 minutes and 22.58 seconds. In the equatorial region it has a temperature of 10°C and -70°C at its polar caps. **Mars** has two satellites—**Phobos**, ten miles in diameter and **Deimos** about 5 miles in diameter. After **Mars**

the remnants of the smashed planet by the gravitational pull of Jupiter, now known as Asteroids, are found. **Jupiter** is a huge planet; 88,640 miles in diameter at the equator. It rotates in 9 hours and 53 minutes. Its outer surface temperature registers— 140°C . It has a density of 1.34 times of water which indicates it has an iron core surrounded by a mantle of carbon dioxide ice. **Saturn** rotates in 10 hours, 14 minutes and 24 seconds. It has a density of 0.715 of water. Its equatorial diameter is 74,100 miles. So the centrifugal force is very great at the equator, no less than 0.17 of the gravitational pull. Just by the whirling process one loses on Saturn $\frac{1}{8}$ of his weight. Its surface temperature is -15°C . It seems it has a metallic core like the Jupiter and sheathed in Carbon-dioxide ice. The comparative higher temperature though far off from the sun is due to some radioactive substance. **Uranus** is 1.27 times as dense as water. It rotates in $10\frac{1}{2}$ hours and its surface temperature is about -180°C . **Neptune** has a density of 1.6 with a surface temperature of -200°C . **Pluto** at the distant end has a surface temperature of -240°C . and revolves in 249.17 years. Its shining magnitude is 15.5. In spite of the low luminosity, it is six times heavier than the Earth and 20 times as heavy as water. The density of Earth is 5.5 times that of water. The rock of the Earth is only 2.7 times to that of water. And the Earth acts as a magnet, as the materials of the earth condensed, heavy metals—iron and nickel—fell into the interior and has formed the core. Under high pressure, though the temperature is very great, it acts like a solid body.

There are about 2000,000 (two million) **Island Universes** hurling through the tenuity of space at the speed of about 1000 miles per second. They are scattered through space fairly evenly, and they appear as nebulae. The immense speeds at which the extra galactic nebulae recede from each other (300 to 1800 kilometers per second, one to two million miles per hour) may be due to the continuous expansion of space like that of a soap bubble. It has been estimated that space doubles its radius every 1,400,000,000 years. All the stars visible to the naked eye (about 3000) are members of our local universe. It is a disk-shaped galaxy of stars, which becomes apparent when

we look at the Milky Way which is its rim. Within our galaxy there are numerous nebulae—shining volumes of exceedingly tenuous gas—diffuse stars, that is stars in formation. It is estimated that our galaxy rotates once in 300,000,000 years.

Extra-galactic island universes appear as nebulae at vast distances from each other, and not only from our local universe. The greatest of them, **The Great Nebula of Andromeda** containing thousands of millions of stars, appears to us as a fourth magnitude star, dimly visible to our naked eye. Its dimness can be easily explained that it is about 800,000 to 1,000,000 light years distant from us. Nearly all of the two million extra-galactic island universes are fainter than Andromeda Nebula. Assuming that they are of the same size and shine with the same brilliance, ordinary calculation proves that the faintest of them must be at least 140 times further away than the Andromeda Nebula, that is, about 140 million light years away from our earth. About 97 p. c. of the island universes are disk-shaped with a dominating shining material in the centre, surrounded by coiled spirals, consisting of stars. The light from the core is like that of the sun, while the light from the edges is usually bluer. But every nebula of different shapes and various number of stars, varying from 10,000 millions to 100 million stars, gives almost identical light, for collective light from such vast distances hardly varies.

| Brilliance | Star | Color | Surface Temp. | Weight | Density | Diameter |
|------------|-------------------------------|--------|---------------|--------|-----------------|----------|
| 1 | Sun | Yellow | 6000°C | 1 | 1.41 | 1 |
| 1200 | Betelgeuse | Red | 3,100°C | 15 | 6×10^7 | 290 |
| 100 | Arcturus | Orange | 4,300°C | 8 | .0003 | 27 |
| 80,000 | Conopus | White | 11,000 | 100 | .0001 | 100 |
| 18,000 | Rigel | Bluish | 16,000 | 60 | .002 | 30 |
| 3400 | Antares | Red | 3,100 | 30 | 3×10^7 | 450 |
| 26 | Sirius | White | 11,007 | 2.4 | .42 | 1.8 |
| .003 | Dark Com- panion of Sirius | White | 7500 | .96 | 27,000 | .034 |

How is it that the dark companion of Sirius has a density of 27,000 times that of water? A Star discovered by Van Moanen has a density 400,000 times that of water. Atoms are

bulky objects for their weight, as their nucleus is surrounded by electrons at great spaces apart. Under a very high temperature and pressure in certain stars, atoms lose their rings of electrons, so the nuclear masses are enormously packed close together. Therefore it is easily conceivable that the dark companion has such a great (27000 times) density. Under great pressures even gaseous matters of very high temperature can be solid. In variable stars, pulsation may be due to stars tending to split into two under the influence of its own centrifugal forces. This is only possible if the stars have liquid like cores.

Hydrogen atom contains the nucleus—proton and an electron. Electrons can be obtained when the Hydrogen atom is ionized. Hydrogen atom divested of its electron consists of a single minute positively charged particle—proton—nearly 2000 times heavier than electron—the negative charge. When the metal Beryllium is bombarded by the α particles from Radium, it is found to emit particles which have the same mass as a proton but without any electric charge: for which these are called **Neutrons**. From interstellar space cosmic rays are found—positively charged particles with the same weight of electron: they are called **Positrons**. In interstellar space heavy atoms are formed, and **Positrons** are their by-products. **Positrons** can also be produced when artificial radio elements emit their radiations and when very short wave X-rays act on matter.

| Atomic | Mass | Electric Charge | Atomic | Mass | Electric Charge |
|----------|-------|-----------------|-----------|---------|-----------------|
| Protons | 1.008 | +1 | Electrons | 0.00058 | -1 |
| Neutrons | 1.008 | 0 | Positron | 0.00054 | +1 |

Nucleus is a group of Protons and Electrons very closely bound together. Carbon nucleus contains 12 Protons and 6 Electrons; 2 electrons in the central ring and 4 in the outer ring. Hydrogen atom has a nucleus of one Proton with an electron revolving round it. Helium atom has 4 Protons and 2 Electrons revolving round them; if 2 electrons of the outer ring are knocked out, it forms heavy Hydrogen—the source of Heavy Water. Sodium atom contains 13 Protons and 12 Electrons; there are two outer electrons near the nucleus, eight

other further away and one lonely electron on the outside. Chlorine atoms are of two sorts. One kind has a nucleus of 36 Protons and 18 Electrons ; 2 electrons near the protons, 8 in the central ring and 7 in the outer ring. The other kind has a nucleus of 37 Protons and Electrons. Sodium and Chlorine combine together easily and make a stable compound— *Common Salt*. Potassium has a nucleus of 39 Protons and 20 Electrons, 2 electrons near the protons, 8 in the central ring, 8 in the next ring and 1 in the outer ring. It seems atoms which have sets of 2, 8, or 18 electrons on their outsides are chemically inert. But all atoms with one outer electron as Sodium or Potassium are chemically very active.

The universe is finite but unbounded and bends back on itself like the earth's surface. It has been proved that light comes back to its starting point, as one can come to Calcutta from Chicago either by the Pacific or Atlantic route. The Nebula M in Triangulum, is 750,000 light years distant. The Great Nebula in Andromeda, the best known of the nebulae, as it is visible in unaided eyes, is 800,000 light years distant. If these nebulae are observed in both directions with telescopes, they can be seen as small and dim objects.

Roughly a ton of bricks occupies a cubic yard ; while the millions of particles which form this ton of bricks occupy only about a cubic inch. The particles of the brick hold one another at distance through the repulsive negative electrical force they exert on one another. This explains why the dark companion of Sirius is so heavy. It consists of closely packed atoms, divested of their electrons. The Sun is 303,000 times as heavy as the earth and it is about 1,300,000 times as bulky ; the Sun weighs 2,000, 000,000, 000,000, 0 0,000, 000, 000 metric tons. The earth weighs 6,576,000,000,000,000,000,000 metric tons.

The **Earth** began to rotate round the Sun as its satellite. And with rotations it became globular, dissipating heat in the space. With the loss of heat it began to contract. Thus in course of millions of years it lost sufficient heat to be a fiery liquid globe of burning, fuming lava, surrounded by a thin coat of

gaseous atmosphere whirling in space round the Sun. About 400 million years were needed to reduce the surface temperature of 6000°C to 200°C to permit the solidification and formation of crust. The surrounding gaseous atmosphere being cooled down by dissipation of heat would precipitate on the crust showers of liquid fiery elements, unable to keep them longer suspended in the aerial mass. Then there would be formations of hot steams, furrowed by incessant lightnings. There would be showers of boiling water to be evaporated rapidly from the fiery crust of the burning lava. Boiling waters would collect in lava fissures and depressions; they shaped the landscape, formed streams, lakes or rivers. Water having a great solvent action washed away the salts from the rocks and brought them into the rivers and finally into the ocean. The denuded materials formed the basis of the sedimentary rocks of the later ages through pressure and heat. They formed the wide river valleys and plains by their deposits of silts.

The **Archæan** represents the first solidified crust of the earth as it cooled from its original molten condition. The Archæan rocks are a mixture of gneisses, granites and schists—crystalline in structure. Peninsular India is Archæan. Its rock beds are horizontal and show hardly any trace of folding. This segment of the earth's oldest crust was connected with Africa, South America and Australia, forming one unbroken section of the shell. Ocean waves rolled over Japan, China, Tibet, Himalayas, Baluchistan, Iran, Arabia, Northern Africa and Southern Europe. Aravalli was its southern shore. There was an Antarctic southern Ocean on Assam coast. The scenic charms of the Aravallis, the Vindhyas, the Nilgiris and Palni Hills are due to the uneven denudation and weathering of the Archæan crusty wrinkles. They are the relics of the primitive higher ridges that have been worn out and are the outstanding portions of the ancient plateau that have escaped the weathering of ages that has denuded the rest. Its rivers have broad shallow valleys with low gradients, for their channels have reached the base level of erosion. The Archæan rocks cover over three quarters of a million square miles of Peninsular India—Madras, Mysore, Orissa, Central Provinces, Santal Parganas and Rajputana up to

the Aravallis against which dashed the waves of the primitive ocean Tethys which extended up to Central Europe. The sedimentary deposits of Archæan origin in the depressions are known as Dharwar System. They are of great economic importance to this country. For they contain the chief ores—deposits of iron, manganese, copper, gold, tungsten and mica. Iron ores are found in large quantities in Bihar and Orissa with shales, slates and hæmatite quartzites. A copper and chromium bearing belts run along the schists and intrusive granites of Singbhum. Mica, corundum and graphite are also found in the same strata. Aggregates of manganese ores are found in the midst of horn-blende-schists and calciphyres of Central Provinces. Numerous auriferous quartz veins with schists, slates and quartzites are found in Kolar fields of Mysore which produce annually nearly 350,000 ounces of gold. In Kalia, near Dadri in Sind, flexible felspathic sandstone of oldest sedimentary formation is found. It can be made to bend like rubber with a turn in the wrist. The felspar has decomposed leaving an aggregate of interlocking grains of quartz. The **Purana** is the Algonkian, a long era between the Archæan and the Paleozoic, marked by both igneous and sedimentary rocks, in some of which marine algæ, protozoa and the tracks of annelid worms may be traced, and lithosiid sponges are abundant. It is an age of plutonic mountain-building and their erosion to the base level where sedimentary Puranas were deposited. The Cuddapaths of Madras are 20,000 feet of indurated states, shales, quartzites with bedded lava flows, but entirely unfossiliferous. Deposits of asbestos and barytes are found in association with Papghni slates in the lowest strata of the Cuddapaths. The Aravalli deposits are about 17000 feet in thickness. They have been subjected to severe compression. But it is devoid of the traces of organic life. Severely eroded bands extend from Delhi to Idar, and are known as Delhi System. It consists of slates, phyllites and quartzites, imbedded with a considerable igneous intrusions in the form of granites. The Vindyan, the sedimentary offspring of Aravalli, shows some displacement and folding in the lower stratum in the northern section, otherwise it is undisturbed. It is about 14000 feet in thickness. It shows traces of organic growths by the appearance of fucoid markings, annelid casts and burrows. The Vindyan

system contains inexhaustible mines of building stones of great beauty and durability. In Upper Vindhyans and in the dykes of Cuddapaths Golkonda diamonds were formed. At the end of the Vindyan Period, the Aravallis got their greatest uplifts. Now it is but worn out and denuded remnant of a high and grand Mountainous Chain.

Palæozoic system is unrepresented in Peninsular India, for it does not show any sign of ever being submerged under the seas. But in Indo-Gangetic depression and in the Himalayas which were under deep ocean, known as Tethys, connecting the Mediterranean and the Antarctic, there are excellent representations. It is called in Indian Geology the **Dravidian Era**. In the Salt Range there are Cambrian 250ft magnesian sandstones and sandy dolomites with *Stenotheca*, 100ft. *Neobolus* shales with *brachipods*—*Redlichia* and *Stenellus*; 450ft. purple sandstone. In Kashmir 7000 feet clays, limestones are found with *Obolus*, *Acrothele*, *Lingulella* in Lower Cambrian, and with *Agnostus*, *Anomocare*, *Conocorypher* in middle and upper Cambrian. In the Spiti valley of Central Himalayas there are 2000ft Cambrian dolomites, red and black states with *Olenus*, *Microdiscus*, *Lingulella*. In the snow-clad Himalayas, for which it is called Haimanta (snowy) System, the base is fixed at an horizon of conglomerates which is exposed only in the Kumaun end of the range; the conglomerate is overlaid by greenish phyllites, states and grits with obscure fossils; the uppermost division of the Haimantas consists of alternating beds of quartzite and shale with narrow bands of dolomitic limestone which are more important at the summit; the shaly beds include several *Olenidae trilobites* of Upper Cambrian. The dolomitic limestones are covered by red slates over which a conglomerate demarcates the Cambrian from the succeeding Ordovician strata. In the Spiti valley there are 2000 ft. Silurian coral limestones and dolomites with *Cystoids* and *trilobites*. In the Lidar valley of Kashmir, there is 100 feet of Silurian rock containing *Orthis*, *Calymene*, *Phacops* and *Iliaenus*. In Kumaun over the Ordovician coral limestone there are Silurian beds of red grits and quartzites with overlying shales and limestones containing upper Silurian coral fossils—*Halysites Catenularia*. These beds

are overlaid by a grey limestone which becomes reddish-brown on weathering ; but the fossils are not well-preserved to be properly identified, and they are likely of Devonian age. Devonian fossils have been found in a limestone on the right bank of the Chitral river, immediately opposite Reshum, where it overlies a red sandstone ; the fossils include corals (similar to those found in upper Silurian in England) and brachiopods like *Orthis striatula*, *Spirifer extensus*, *Athyres concentrica*, *Atrypa aspera*, as found also in Southern China. The limestone which uninterruptedly extends from Maymyo to the Salween river in the Northern Shan States contains the typical Devonian coral—*Calceola sandalina*.

Lower and Middle **Carboniferous Age** is represented by the 4000 ft. grey limestones with numerous brachiopods—*Phillepsia*, *Fenestella* and *Bryozoa* in the Lipak valley of Eastern Spiti and Bhot Mahals of Kumaun. In Kashmir there is 6000 ft. of *Syringothyris* limestone and fenestella conglomerates. Upper Carboniferous brought profound changes. It coincided with severe earth movements, the deepening and extension of the Eurasian Ocean, known as Tethys, and an ice age, leaving ice-scratched, faceted and striated pebbles and glacial boulder bed with fine-grained silty matrix, found scattered from Orissa (Talcher series) to Salt Range and Aravallis (Mallani series). The boulder beds are overlaid with thick coal measures, known as Damuda Series, carrying the most important coal deposits of the country—Raniganj, Dhanbad, Mohpani, Kohat, and Quetta. The Tethys flowed over a belt, dashing against the Aravallis in the south, across Southern Europe, Central Asia, the Himalayas, Burma, China and Australia, leaving similar fossil marine deposits due to the free migration in the Ocean. The fossils found associated with the boulder bed contain the same carboniferous species as the marine beds of Australia such as *Eurydesma globusum*, *E. ellepticum*, *E. cordatum*, *Conularia laevigata*, *Pleurotomaria nuda*, thus proving the common ocean communication in both of them. In the Peninsular India earth-movements and stresses resulted in producing lineal tensional cracks and fissures, parallel to the subterranean ridge—the great depression of the Gangetic Valley and

in the subsidence of large tracts where thus basin-shaped depressions were formed in the Archæan rocks. These depressions were filled with land and river sedimentary deposits of denudation, known as the Gondwana System, for they are found in the Gond territory, south of Narbada. These deposits with the drift of the dense forestation of Central India which has formed coal seams 20 to 80 ft thick at the base—the main source of Indian Coal supply—are prominent in the Damodar, Godavari and Mahanadi valleys and in Satpuras in smaller patches. The Damuda Series which contains the most valuable coal deposits of India is nearly 10,000 ft. thick and is overlain with Panchet Series of micaceous sandstones of greenish colour with rich reptilian amphibian *labyrinthodonts* fossil bone yields. A prolific *Glossopteris* flora with seed ferns—*Gangamopteris*, *Glossopteris* and *Cordaitales* of the lower Gondwana has closer affinities with the Mesozoic plants of Europe than with the plants of upper Paleozoic coal measures. The *Glossopteris* flora of Damuda Series closely resemble the fossil plants of similar formations of South and East Africa, Brazil, Argentina and Australia. Not only the fossil plants correspond to each other, the fossil bones of labyrinthodonts and reptiles of the Panchet series are similar in corresponding beds of South Africa, thus indicating land connection. While the plants of Lower Gondwana include equisetaceous forms, upper Gondwanas show the prevalence of Cycads and conifers, thus indicating a change of climate and evolution of plant forms. Fishes and labyrinthodonts are also succeeded by reptiles. The Satpura Gondwana known as Mahadeva or Pachmarhi Series consists 10,000 ft. thick sandstones. The Godavari Gondwana, known as Kota-Maleri Series has a rich deposit of coal associated with the fossil fish *Ceratodus* and the reptiles *Parasuchus* and *Hyperodapedon*. The Rajmahal's shaly sediments contain a number of fossil plants including angiosperms, interbedded with basaltic lava sheets, of thickness of over 2000 feet. The Rajmahal lava flows are often amygdaloidal like those of Deccan trap series, the cavities yielding agates and zeolites of considerable variety and beauty. The highly evolved fossil angiosperms also indicate a later period of geologic age—Jurassic or lower Cretaceous.

A similar age is indicated in the Umia beds of Cutch which has a thickness of nearly 6000 feet. containing marine intrusions of *Trigonia* and ammonites of lower Cretaceous with the plant flora of Rajmahal angiosperms. In the highly fossiliferous limestones of Jaisalmer, Bikaner and in the western part of Salt Range similar marine fossils of *Trigonia* and ammonites have been found. The salt Range has beautifully preserved the marine fossil fauna from the Carboniferous up to the Triassic through the rich mosaic of the Permian. The base of the Salt Range contains glacial ice-scratched, striated and faceted boulders of Archæan rocks from Aravallis embedded in a silty matrix. This boulder bed is overlaid with conularia sandstones containing *Eurydesma* and other fossils, quite similar to those found on the glacial boulder beds underlying the coal seams of New South Wales. On the top of it are mottled sandstones and clays with well preserved fossil impressions of Glossopteris and Gangamopteris, the common and luxuriant genera of Lower Gondwana. On this is overlaid the 700 ft. thick deep marine **Productus Limestone** containing the brachiopods—*Productus spiralis*, *P. semireticulatus* and *P. cura*. On the upper layer of Productus Limestone there are numerous fossils of Triassic ammonites—*Cyclobolus*, *Medlicottia*, *Popanoceras*, *Taeniceras* and *Arecestes*. Pangal volcanic series of Kashmir are interbedded with Productus Limestones and fossil impression of Glossosteris as Gangamopteris flora, nearly 8000 feet thick.

Immense and deep troughs were formed in the ocean floor of the Tethys which were filled with fossil faunas of lamellibranchs, crinoids and ammonites to the height of thousands of feet, representing the Permian, Trias, Jurassic, Cretaceous and Eocene periods. The Himalayan marine fossil fauna are similar to those of the Alps and other European Mesozoic areas, thus showing that the same ocean flowed in both these distant zones. These heavy loads disturbed the equilibrium of the crust, which thus being bent wrinkled up to form the mountain chains—the Alps, the Caucasus and the Himalayas. Permian Productus Sirban limestone of Hazara; Krol limestone of Simla-Chakrata, nearly 3000 ft. thick. Triassic cerated beds of Salt Range; and limestone and dolomites of Kashmir, Spiti Garwal

and Kumaon, about 5000 ft. thick. Jurassic Kioto limestone and dolomites overlain by Spiti shales from Hazara to east of Nepal about 4000 ft. thick. Cretaceous Giuman series of Spiti, Hazara and Kala Chitta; Chikkim series of white limestone and shales of central Himalaya; Para limestone and Pab sandstone of Sind; volcanic series of Burzil as Deas of Kashmir about 6000 ft. thick. The marine upper Cretaceous Bagh Beds in the lower Narbada valley contain fossils, particularly the echinoderms, which show striking resemblances to those of Cretaceous beds of Syria, North African and Southern France, all patches of limestone deposits in the great ocean of Tethys of which the modern Mediterranean is but a shrunken relic. The Lameta Beds are a narrow zone of fresh-water and estuarine beds of the upper Cretaceous covering a wide area underlying the Deccan trap: the fossil remains of 12 genera of Dinosaurs, particularly of large *Titanosaurus indicus* have been preserved in them. In Jurassic and Cretaceous period, there was an intrusion of the sea in Cutch which penetrated up to Jaisalmir. In Cutch nearly 6000 feet of fossiliferous limestones were formed of a diversified but local cephaloid fauna. 114 genera and 600 species of ammonites have been identified of purely local evolution, as their types are unknown elsewhere. Of others fossils show no affinities with the Tethys deposits, but show some kinship to the Jurassic faunas of Madagascar. Trichinapoli coast was submerged and covered with 3000 feet of fossiliferous grits and sandstones in which have been preserved the fossil bones of *Megalosaurus*, about 1000 species of marine molluscs, the majority of them being ammonites, disclosing close relationship with the Cretaceous of Madagascar, Natal, Borneo, Japan, Sakalin, California, Vancouver and Chili, but unlike those of Bagh beds. We have thus a contrast between the Mediterranean Atlantic Cretaceous shore of Northern and Western India, and a Pacific shore. And Assam, Trichinapoli and Natal Cretaceous beds show a distinctly littoral character.

In the **Eocene** great earth movements took place about 60 to 70 million years ago. Deccan, Sind, Baluchistan became subject to great volcanic outpourings for a long period, but with intermissions. Basaltic lava covers a large track of Deccan which

thus has been converted into a plateau, several thousand feet high (Deccan Trap). The weathering action of ages has shaped this trap formation into numerous steep-sided clips and square crested flat-capped peaks which were utilized by Mahrattas in their historic fight for freedom as hill fortresses and as petrified giant sentinels. The plateau has the elevation of about 3000 feet. In the dissected sides of these ghat-shaped hills there are piles of bedded basalts, in 20 to 80 feet thick horizontal flows, separated by their sedimentary deposits—intertrappean beds. These inter-trappean beds contain fossils of many fresh-water lake moluscs, frogs and fishes, numerous reptiles, animals, palms and flowing plants that migrated, grew and multiplied, during the long intervening periods of volcanic quiescence. The Deccan trap magma is generally undifferentiated basalt or dolerite. But in Pawagarh Hill near Baroda and in Girnar Hill in Kathiwar ultra basic variations of magma are met with in their intrusive and extrusive forms, and numerous zeolitic and secondary minerals are found in their vesicular cavities and interstitially in the lavas. Swarms of dykes of dolerite traversing the bedded lava flows for long distances and extending through the bordering terrain, as noticed all along the periphery of the Deccan trap, denote the volcanic fissures. In Sind and Baluchistan the interbedded flow of undifferentiated amygdaloidal lava is associated with fossils of *Cardita beaumonti* which in Europe are found distinctly in Tertiary formations. It is related with the Tertiary gabbro, peridotite and grandpyre intrusions, chromite segregations of the Quetta and Zhob districts and serpentinized peridotites with their embedded valuable mineral jade of Burma. The stupendous volcanic irruptions coincided with the lifting of the Alps, Pyrenees, Caucasus, the Himalayas and Tibetan plateau which were being built by the skeletal remains of marine animals of Tethys. The lifting of the great mountain chains brought about the sinking of the great slices of Gondwanaland that extended from India to Australia through Africa and South America, into the fluid magma below as a process of compensation, virtually splitting up the Western Ghats at the water-parting, and floating and drifting away Western Africa from Central and South America that fit well into each other. In all four continents—India, South

and Western Africa, South America and Australia—plants, primitive ferns (*Glossopteris*) and primitive conifers (*cordiates*), Horse Tails (*calamites*)—and reptiles— *Pareiasaurus*, *Tyrannosaurus*, *Endothiodon*, *Cynognathus* and *Theromorphs*, belonging to the Eocene period, have been found in fossil forms. It is known that between the Seychelles which are connected by comparatively shallow waters with Madagascar and Africa, and the Maldives which are on the Indian continental platform, there exists a submarine bank, the remains of the old continent, depressed sufficiently to cut off India from South Africa, but still enduring as a link and a barrier of preventing the cold Antarctic currents to extend to the depressions of the Arabian Sea. Seychelles are granite islets—peaks of a great submerged range that was connected with the Aravallis, quite unlike Zanzibar and Pemba which are coral islands. Though the Red Sea and the Arabian Sea are largely coral seas, bounded by coral islets and reefs, but the South Arabian coast and Kuria Maria Islands are stratified cliffs, devoid of coral life. The 10,000 ft. submarine ridge which runs southwest to Socotra is but the submerged continuation of the now much-denuded Aravalli Range. The drifting apart of South America from Africa looks also apparent if one carefully looks at the map. Brazilian Pernambuco promontory fits closely into the Cameroons, Bight of Biafra. Senegal projects into the Amazon basin. The hydrographical inference indicates that the eastern half of a far wider land area of which the main water-parting was nearly coincident with the Western Ghats, and the rivers flowing westward thereof, has disappeared with the submerged land they had intersected. All the great rivers of Deccan take their rise in the Western Ghats and flow across the peninsula into Bay of Bengal. Only Narbada and the Tapti cut their way in deep channels into the Arabian Sea. Deep channels betray their recent evolution as old rivers always have broad and open valleys with gentle slopes. According to some scholars, especially Wegener all the land areas of the globe were once directly united together into one continental mass. The two Americas lay much further to the east while Europe and Africa lay further west. Greenland, Iceland and the British Isles were all much closer together and were wedged between Canada and

Scandinavia. South America fitted into the great angle in the west coast of the African continent. Australia and Antarctica lay close up against the south-eastern coast of Africa with the southern tip of India in contact with Madagascar and wedged in between the African and Australian blocks, and South Pole was somewhere in Cape Colony.

The volcanic irruptions of Deccan, the splitting up and sinking of the larger part of the western continental part of the Western Ghats that connected India with Africa and Australia, and the uplifts of the Himalayas are the principal events of the Eocene. It caused great ever-widening fissures in the crust. The great Rift Valley of Africa is still in its unfinished stage. The Red Sea Rift has become 200 miles wide. The Himalayan uplift created a depression—a fore-deep—at its foot. This fore-deep lay between the folded half of the Himalayas and the Peninsular rigid shelf—the Aravallis, Vindyas, Hazaribagh, Rajmahall Hills and Assam Range. There can be no doubt that this Himalayan fore-deep extends far below the sea level, though since its formation it has been filled up by the deposits. This may be as deep as 40,000 ft. but not certainly less than 20,000 feet. In the upper Eocene time this wide trough was a gulf of the sea. It is known as the Indo-Gangetic Depression. As it was gradually filled with the sedimentary deposits from both the mountain ranges, the sea slowly retreated, leaving behind as a memorial highly fossiliferous nummulitic massive limestones extending from Nainital to the Kala Chitta Hills, known as *Kirthir series* of the Punjab, N. W. P. and Sind, about 6000 ft thick; and *Jaintia series* of Assam. By the sedimentary accumulation the Indo-Gangetic Depression, the remnant of the ancient Tethys, was reduced into two gulfs. The Sind gulf extending north through Cutch, Punjab, Simla and Nepal; and the gulf of Assam and Burma, separated into two by the meridional ridge of Arakan Yoma. Then a Himalayan river (Brahmaputra) traversing from Assam the entire Indo-Gangetic depression emptied itself into the Sind gulf. In this river system *Nari series* of Sind, Baluchistan and Cutch; *Barail series* of Assam; *Gaj series*; *Surma series*; *Murree series*; and *Siwalik* system were formed. In the Nari series, about 6000 feet thick,

the lower deposits are marine limestones with foraminifera, and upper deposits are fresh water sandstones of Oligocene. In the Gaj series nearly 15000 feet thick marine limestones overly fresh water strata with land mammals of Miocene; that indicates that the Murree Hills were submerged and later uplifted. The rock-salt, coal and petroleum are associated with the Eocene and Miocene of the Punjab, Assam and Burma. The rock salt occurs to the depth of hundreds of feet in the Laki series of the Salt Range, in the adjacent Kohat and Mandi areas where from more than 170,000 tons of salt are mined annually; many orthodox Hindus, particularly their widows, use no other salt but this. About 450,000 tons of coal are mined from the Ranikot-Laki coal deposits. From the Khaur and Dhulia nummulitic limestone overlying Murrees nearly 15 million gallons of petroleum are mined. Burma Miocene deposits supply more than 250 million gallons of petroleum annually and Assam about 53 millions per year.

Siwalik system, about 16000 feet thick, is a river deposit formation of the debris brought down from the uplifted Himalayas by the numerous transverse rivers and deposited in the valleys of the lower Himalayas by the north-western flowing river Bhramaputra. It is a continuous formation from Nepal through the Punjab where the width is greatest to Sind, remarkable for the abundance of mammalian fossils. Out of 64 genera of mammals which have been identified among the Siwalik fossils, 39 have species still living, while 25 are now extinct. Among the reptiles only two out of 12 genera are extinct while all the birds and fishes whose fossils have been examined and identified belong to living genera. The more noteworthy is the fact that Siwalik has preserved the fossil remains of a dozen different kinds of great anthropoids. It belongs to the early Pliocene age which is corroborated by the stratigraphical similar deposit (about 20,000 feet thick) of the Irrawaddy system whose marine beds of Miocene Age are placed beyond doubt by their fossil contents. Out of the 26 mammalian fossil remains, 18 have been determined of which 11 are identical with forms found in upper Siwaliks. It should be remembered that identifying a fossil animal is not always an easy task. Seldom the entire

skeleton of an animal is found ; and rarely entire unbroken bones or the whole skulls. It is mainly by the teeth, the structure of the jaws and skull, the species of the fossil remains are identified. Rather the peculiarity of the teeth is the best guide. The scientific names of fossil animals are often made after the nature of their teeth. Thus *Mastodon* is fashioned after the Greek word, meaning, *mammillated teeth* ; *Stegodon* meaning *roof-shaped teeth* ; *Loxodon*, meaning, *oblique-ridge teeth*. The modern elephant has lost all his front teeth, except two upper ones which have grown into tusks. He has no canines or eye-teeth. As for grinding teeth, he has not more than one or portion of two visible, on each side of each jaw. The grinding teeth of elephants have from 12 to 16 transverse ridges. In *Stegodon* there are from 6 to 8 transverse ridges, an in *Mastodon* usually 3 or 4. Thus an ancestor of *Mastodon*, called *Tetrabelodon*, has tusks in the lower as well as in the upper jaw, and there are three visible grinding teeth on each side of each jaw, instead of the single tooth or portion of two visible in the living elephant. *Tetrabelodon* and *Dinotherium* are found in Siwaliks from the Kamlial to the Dhok Pathan (Lower to Middle Siwaliks) sandstones. But in Dhok Pathan beds, these two animals are found with *Mastodon* and *Stegodon*. In the Tatrot sandstones of upper Siwaliks no specimen of *Tetrabelodon* and *Dinotherium* has been found. They became extinct, leaving behind a modified descendant *Mastodon*. *Mastodon* also died out, as it is not found out in the upper strata—Pinjar sandstones—leaving behind *Stegodon* and the still living genus *Elephas*. The *Elephas* of the Pinjar sandstones is not however the modern Indian type, but is very close to the living African species. The modern elephant is not found in fossil, but is closely allied to the extinct Mammoth of Northern Europe. Though *Mastodon* became extient in Siwaliks, it persisted in North America right into the glacial period. The Indian elephant (*Elephas maximus*) frequents hilly forested regions, covered with bamboos and plantain, particularly in Mysore and Burma. The Indian Rhinoceros (*Rhinoceros unicornis*) has one horn (Skt. eka-sringa = Monoceros = unicorn). It has two front teeth above and four below ; the two front teeth are really canines which have moved forward. There are 7 cheek teeth on either side of either jaw as in a pig. But the

pre-molar is often rudimentary and falls away early. The Javan rhinoceros has 2 front-teeth above and 2 canines (which have moved to a forward position) below and 6 visible cheek teeth on either side of each jaw. It has two horns—a well-developed nasal, and a small frontal horn. The African rhinoceros has two well-developed horns; it has lost its front teeth and canines, but retains the regular number of cheek-teeth. In the Lower and Middle Siwaliks there is an abundance of the fossils of *Acertherium*; but it had the same number of teeth of the Indian Rhinoceros, but had no horn. In the *Dhok Pathan* beds there is *Rhinoceros sivalensis*, an ancestor of Javan Rhinoceros. In Burma a fossil of rhinoceros has been found in a bed older than Siwaliks having a regular number of incisors or front teeth in the upper jaw. In the upper Siwaliks the ancestor of the Indian Rhinoceros—*Rhinoceros palæindicus*—has been found; also *Rhinoceros platyrhinus*, resembling the square mouthed African Rhinoceros (*Rhinoceros sinus*). In the Bugti Hills of Baluchistan (earlier than Siwaliks) and Eocene bone-beds of Burma, 95 p. c. of the specimens were of *Anthrocotheres*. *Anthrocotheres* were piglike animals. The primitive *Anthrocotheres* had teeth with isolated tubercles like those of the pig; but later developed crescent-shaped connecting longitudinal ridges, characteristic of the grass-eating animals. In the Kamlials they are much reduced in number and in higher beds entirely absent but replaced by *Listriodon*, a similar piglike animal, but with united tubercles of the teeth to form transverse ridges. The wild boars allied to the modern type are found in the Nagri beds of middle Siwaliks and continue to be in the upper strata. The ancestor of the African river-hogs is also in the Siwaliks. *Merycotamus*, ancestor of the Hippopotamus, is found in the Middle Siwaliks. **Hippopotamus** is found in the *Dhok Pathan* beds and is abundant in the upper Siwaliks. But the Indian species had more front teeth than the living African hippopotamus—the water pig. The Indian wild Boar (*Sus cristatus*) lives in grassy bushes all over India. The pigmy Hog (*Porcula salvania*) is found in the Himalayan foot-hill forests of Nepal, Sikhim, Bhutan and Assam. The Anadaman pig (*Sus andamanicus*), a small animal, is found in the coastal fringe of the island. Hippopotamus is extinct in India. The modern Giraffe has six

cheek teeth on either side of either jaw. This is the pattern of all ruminants—oxen, sheep, antelope, deer. But the Giraffe is easily distinguished from the rest of the ruminants by the peculiar form of its lower canine teeth, the crown of which is divided into two halves by a slit. No other living mammals except the Giraffe and Okapi have these peculiar slit canines. In the Kamalial and Chinji beds of lower Siwaliks Giraffes are found as small creatures. The antelopes begin to be numerous in the Chinji beds, but they are small in size. In the Dhok Pathan beds antelopes with curved horns make their first appearance. **Buffaloes** appear in the Tatrot beds (U. Siwaliks) which also contain abundant new types of antelope and other ruminants. The modern ox first appears in the Boulder Conglomerate (u. Siwaliks) where also the camel and the horse are seen for the first time. The fossils of Hipparion, the ancestor of horse, are found in the Chingi beds and are very abundant in the Dhok Pathan deposits. Hipparion makes its last appearance in the Pinjar sandstones. The Hipparion had three toes, but the side toes were of diminished size and did not touch the ground. In the modern horse three petit toes have still further diminished in size and have become the splintbones. The ancestor of Hipparion—Hyracotherium - not however found in India—had actually three toes and which touched the ground and were useful to the animal. The camels have near relatives still living in South America—the llamas. But in the Siwaliks we find no ancestor of camel. In the Boulder Conglomerate modern camel appears. But in America abundant fossil remains of the ancestral type of camels are found. So it is likely that camels emigrated to India from America in Siwalik times. Like the camels the Tapirs of lower Burma and Malaya have no nearer relatives than the Tapirs of Central America. In Europe among the fossil remains of lower Pleistocene tapirs are found, but not in Siwaliks. Sabre-toothed tigers are first found in the Chinjis and die out in Boulder Conglomerate; their fossils have been found in Brazil and in Pleistocene Argentina. It is now extinct everywhere. Hyenas are found in Chinjis. Amphicyon, related to both bear and dog, may be the common ancestral stock of both, has been found in Kamalial and Dhok Pathan beds. In the Chinji beds appears Dryopithecus—the ancestor of the gorilla.

Sivapithecus of the same bed has excited great interest among scholars. It shows some primitive human characters. Its grinding teeth are square and broad, and the whole jaw is foreshortened rather more than in most apes. It might be related to modern gibbon. *Palæosimia* also found in Siwaliks may be the ancestor of the Orang. *Dryopithecus giganteus* and *D. chinjiensis* have been also discovered in Siwaliks.

With the end of the Siwaliks the Himalayan upheaval was completed; for in many localities of the Himalayan foothills tightly folded Siwalik strata stand on edge or have been thrust over the Pleistocene alluvium. In Middle Pleistocene due to differential earth movements the north westerly river drainage system was disturbed in the Indo-Gangetic depression. It was split up into three separate river systems of the Indus, Ganges and the Brahmaputra. The depression was filled up as each fresh uplift of the mountain must have rejuvenated the streams and silt-bearing capacity. But in the two great areas of folding at the eastern and western extremities of the Himalayan range, volcanic action has persisted down to recent times as in Sumatra, Java, and Sunda Islands in the east; and Kohi-Sultan, Kohi-Tafdan and Basman Koh in the west in the Iranian region. Earthquakes still persist where the rocks have been recently folded, and not in stable Peninsular India, as in Assam, Kangra, Kohat and Quetta. Rann of Cutch was submerged by an earthquake in 1819. On the east side of Bombay Island trees have been found embedded in mud about 12 feet below low water mark, while a similarly submerged forest has been described on the Tinnevely coast, thus indicating that the land and sea level has undergone changes in recent times. In the alluvium of the upper Godavari valley, in the Nasik District of Bombay, the skull of *Elephas namadicus* has been found. Remains of *Hippopotamus* and *Bos namadicus* have been recently obtained in wells 80 ft below the bed of the Ganges near Allahabad. In Kathiwar there is calcareous freestone used extensively for building purpose, known as Porobandar stone, attaining a thickness of about 200 ft. The rock consists largely of the remains of minute foraminifera with small quantities of sand grains which have been transported by the wind from the sea-shore. It is not only found in Junagarh

which is only 30 miles from the coast, but even as far as Bikaner. Though sand dunes in undulating curves 50—100 feet high move in slow procession in obedience to westerly winds and make the Thar Desert desolate it overlies the primeval sea—Tethys.

| Geologic Period | Age in Millions of years | Rocks of Each Period | Inhabitants |
|-----------------|--------------------------|---------------------------|--|
| Archæan | 1800 | Sands, slates, baked | or melted by hot magma below. |
| Algonkian | 1000 | Sandstones | Presence of Carbon. |
| Cambrian | 500 | Sandstones and slates | Water plants, shells and sponges. |
| Ordovician | 450 | Shales and limestones | Jelly fish and animalcules. |
| Silurian | 400 | Fossiliferous Limestones | corals, fish and land plants. |
| Devonian | 350 | Sandstones and limestones | Tree-like plants and varieties of fish. |
| Carboniferous | 300 | Coalfields | Huge forests, amphibious reptiles, spiders, insects. |
| Permo-Triassic | 220 | Sandstones on land | Huge Reptiles and Mammals. |
| Jurassic | 130 | Limestones | Ammonites, giant reptiles, flying Lizard, birds and Mammals. |
| Cretaceous | 100 | Chalk | Flowering plants, birds and mammals. |
| Tertiary | 60 | Clay Beds | Mammals, Birds, Horses, Elephants, Ape. |
| Quaternary | 20 | Sedimentary | Biggest Mammals, Anthropoids, Man. |

The age of the Earth may be computed between 2000 and 3000 million years, calculated on the basis of the formation of land from the radium in rocks. The age of the sun is between 5 million to 8 million million years. In the uppermost

Cambrian about 1200 million years ago, fossils have been found. About 500 million B.C. Trilobites were developed. About 400 million B.C. not until the Late Silurian, vertebrate fossils of fish related to Sharks have been noticed. In the early Devonian insects appear. In the Late Devonian about 300 million B.C. land vertebrates are known. In the Permian reptiles appear. The age of reptiles lasted about 125 million years. In late Triassic birds appear. The long jointed tail of Archeopteryx only differs from lizards with a row of big feathers on the side up to the hip region. In Jurassic Cretaceous period, there were some improvements, yet pterosaurs had long tails like most reptiles though they made gliding flights with occasional wing beats. In the beginning of Cenozoic Dinosaurs disappear and placentals appear in large numbers. In the lower Eocene mammals appear in large numbers. In the lower Eocene mammals appear—rodents, ungulates, edentates and primates of the lower group. The age of Mammals is not more than 50 million years. Higher primates are not older than 10 million years, about $\frac{1}{100}$ of the age of the earth. Man is not older than one million years, $\frac{1}{10}$ of I. p. c. of earth's age. The mammals number 10,000; birds 16,000; reptiles and amphibia 9000; fish 20,000; mollusca 60,000; crustacea 12,000; insects, 470,000.

If human serum is injected into the veins of a rabbit, the rabbits' blood becomes charged with a specific antibody for human blood. This can now be used a reagent for testing any other blood to human blood. If a few drops of it are placed in a test tube containing human blood, a heavy precipitate is immediately formed. If placed in the serum of gorilla or chimpanzee, a less abundant preceipitate is formed. But the baboons, New World monkeys, marmosets and lemurs react less readily in the order mentioned. By this method we find (1) that the birds show close relationship to reptiles. (2) The whales—the mammals that have adopted aquatic life—show an unmistakable affinity to the hooved mammals, especially the swine. (3) All primates show closer affinity to each other than any genera of mammals. (4) All carnivora show closer affinity than to other mammals. (5) King Crab (*Limulus*) is more closely related to scorpions and spiders than to crabs.

The wings of the ostrich, cassowary, New Zealand kiwi, being useless for flight, are very diminutive compared with those of flying birds. The whales are mammals adapted to the life of the sea. They are warm-blooded and are protected against the changes of temperature by a covering of blubber, instead of hair. They come to the surface of water to breathe and they can store a large supply of oxygenated blood to be drawn upon during their submergence. Locomotion is accomplished chiefly by the enormous tail flukes which spread out horizontally instead of vertically as do the tails of fishes. The flippers of the whale which correspond to the forelegs of other animals are chiefly used for their locomotion through the water; of hind legs there is no external trace, but when the interior of a whale bone is examined in the hind legs region, a group of isolated bones is found which correspond in part to the pelvis and in part to the legs of other animals. The front and hind legs of the horse contain traces of the five toe bones of animals. Of course in the evolution of the horse we find the four-toed horse (*Eohippus*) of the Eocene period, three-toed horse (*Mesohippus*) in the Miocene, which developed into the present one-toed horse (*Equus*) in the Pleistocene. There are 4 stout bones in the knee of the horse to its hoof, corresponding to the four bones in line with the middle finger of man. Buried in the flesh below the shoulder of the horse is a single bone corresponding to the one in our upper arm. Following this there is a pair of bones, duplicating the two bones of our upper arm. The mouth of the human embryo resembles that of a shark, and the nostrils as in the shark are connected with the edges of the mouth by grooves. Then the head grows to be like that of a tadpole, and just in the young tadpole, the head is divided from the body by a narrow neck, quite dissimilar to the neck of a child. Along the sides of the neck there are series of gill slits, and just in the tadpole; these become covered by flaps of skin that grow back from the head and join the trunk. The neck indentation is thus obliterated and the head passes without a break into the trunk just as it does in the developed tadpole. The blood vessels at the side of the gill clefts resemble exactly those of the tadpole. There are four of them on each side and like those of the tadpoles; third on each

side drops out. The salamander retains the four throughout life, but its near cousin, the newt, drops out two third as does the frog. Thus the story of man's development from a water animal and his gradual closing up of the gill clefts is accurately repeated in the human embryo. We find the same history if we study the development of the young lizard within its mother. In the process of human embryonic development, as the limbs grow out, the embryo resembles an ordinary four-footed animal; but the fingers and toes are at first webbed like that of a frog. At this stage there is a well-developed tail, and later there is a complete covering of hair like the hairy skin of a primate. At birth the big toe of a human baby is widely separated from the other toes just as in the big toe of an ape and the legs similarly curve inwards at the ankles. There are about 167 vestigial organs in man. Snakes are commonly regarded as legless reptiles. But in the python a small claw is observed on each side of the vent, and the claws are supported by bones within the body in such a way that they are clearly the vestiges of hind legs. Most air-inhabiting vertebrates have two lungs—one on the right side and the other on the left. Many snakes have only the right lung, the left being represented by a small protuberance. The ovaries and oviducts of most animals are evenly developed on the two sides of the body; but in the birds these function only on the left side so that by friction eggs are not broken. The ovary and the oviduct on the right side are vestigial. The human external ear is provided with three considerable muscles whose respective actions would be to bend the ear forward, upward and backward. In the dog and horse these movements are of great value in discovering the direction of the sound; but in man they serve no such corresponding purpose. Deep-seated in the nasal angle of human eye there is a crescentic ridge of white tissue which in consequence of its shape is called the *plica semilunaris*. In the nasal angle of the cat's eye there is not only a small fold of membrane, but a veritable third eye-lid to pass under the two outer lids and the whole exposed surface of the eyeball to protect the eye. The vermiform appendix whose cavity opens directly into that of cæcum is rudimentary in man and in anthropoid apes. But in rabbit a large and a highly complex cæcum communicates freely and easily with an extended

and highly functional appendix. For fleeing animals it is useful and necessary to avoid frequent evacuations.

It is likely that Mongoloid has evolved from the anthropoid stem of Orang; orang has no supraorbital torus, and the Mongoloids lack supraorbital eye brow ridges. This type possibly has hyperthyroidism. The Australoids sprung from the Gorilla, and the Negroids from the Chimpanzee stem, and the Caspian from the Gibbon (*Sivapithecus indicus*) stem.

2.—WANDERINGS OF MAN

Man is an arboreal mammal which has left its arboreal life. His remote ancestors continuing to live in forests have preserved their jaws, teeth and limbs on the primitive mammalian plan. In the interglacial period, possibly in the outer Himalayas, there was excessive destruction of forest on which anthropoids lived. This forced the surviving anthropoids to live as ground apes and change their mode of feeding. Gradually driven to terrestrial life, anthropoids became men and tool-making creatures. By leaving the trees they developed an erect gait on land, and to balance the head, the brain-case (skull) was enlarged, and thus gave man his greatest asset—his big brain. And for the development of the brain gestation period was increased. The gestation period of the gibbon is 7 months; of gorilla, chimpanzee and orang-otang is about 9 months. The anthropoids menstruate at from 25 to 29 day periods and give suck for eight or nine months. They begin to produce young at from 11 to 12 years. Mesozoic dinosaur—*Diplodocus*—growing to 80 feet in length and weighing about 20 tons had a brain of the size of a hen's egg. The brain of *Uintatherium*—a big rhinoceros like animal of the Eocene—weighing about two tons was no bigger than that of a dog. The brain weight of anthropoids varies from 360 to 420 grammes.

The ratio of the weight of the Brain and of the Body

| | | |
|-------------------|-----------------|-------------------|
| Whale 1 : 3000 | Sheep 1 : 350 | Rat 1 : 76 |
| Ox 1 : 860 | Dog 1 : 305 | Chimpanzee 1 : 50 |
| Kangaroo 1 : 800 | Cat 1 : 156 | Man 1 : 86 |
| Elephants 1 : 500 | Rabbit 1 : 140 | Mouse 1 : 31 |
| Horse 1 : 400 | porpoise 1 : 93 | Canary 1 : 14 |

The average cranial capacity of an Australoid is 1363 c. c. ; of a Negroid, 1350 ; of a Mongoloid, 1407, of Palæ-Alpine, 1428 ; of Mediterranean, 1430 ; of Aryan 1435 ; of Caspian, 1450 ; of Alpine, 1468. The excessive development of the brain and the brain case has caused the reduction of the facial part of the skull. The excessive development of the brain, being conducive to the enlargement of the skull assured its equilibrium on the vertebral column of the head. With the majority of mammals the equilibrium of the head is assured by very powerful cervical ligaments, and with anthropoids by very strong muscles, extending from the occiput to the spinous processes of the cervical vertebrae, twice as long as those of man which prevent the massive muzzle from falling upon the chest and pressing on the respiratory organ. The very voluminous brain case of man suffices to counterbalance the weight of the much reduced maxillary part, almost without the aid of muscles or special ligaments, and the head balances itself on the vertebral column. This equilibrium being almost perfect necessitates but very thin and flexible ligaments in the articulation of the two occipital condyles of the skull on the first vertebra of the neck (atlas). The slight muscles to be found of the articulation are there only to counterbalance the trifling tendency of the head to fall forward. The erect attitude of man has developed three curves—cervical, dorsal and lumbar—in his vertebral column which are faintly marked in the anthropoids, and almost absent in monkeys. At birth man still bears the traces of his quadrupedal origin. He has then scarcely any curves in the vertebral column. The cervical curve only shows itself at the time the child begins to *hold up its head*, in the sitting posture to which it gradually becomes accustomed, about the third month. And soon after the child begins to walk (about the second year), the prevertebral muscles and those of the loins

act upon the lower regions of the spine and produce the lumbar curve. The vertebral curvature is simply an acquired formation. It is more marked in civilized man, because the vertebral column has been stabilized due to accustomed sitting posture of man which civilization has developed as a luxury, the sedentary life. A curvature less marked, found among the savages, gives them flexibility to their numerous and varied movements so essential in savage life. The first toe, opposable in the anthropoids and unopposable in man, the relative length of the toes and fingers, constitute modifications correlative to the erect attitude and biped movements of man and to his terrestrial habitat as opposed to the arboreal habitat of the anthropoids. The early ground apes looking for food would naturally turn to animal food resources and thus became omnivorous. The animal diet might have increased the size of the ground apes' canine teeth. But finally it resulted in the reduction of the jaw and size of the teeth. As a result of the erect posture, the brain increased in volume. And the ground apes began to use sticks and stones to kill the animals for their food and to break their bones for their marrows. Thus gradually they began to lose their sharp pointed canines. The Austriacs have slightly larger canine than the civilized people. Grass appeared at first in Late Eocene and spread rapidly. The use of grass and its seeds which are closely allied to modern grains by ground apes which were accustomed to fruit diet caused finally the change of their teeth. The dental arch in man has a tendency towards the elliptical form whilst in apes it usually takes the form of U. The wisdom tooth seems to be in retrogressive evolution. Among the civilized peoples it is smaller than the other molars. A mixed diet gave man his chin.

The Australoid has a deep copper or chocolate brown skin, never sooty black like the negro. He has the medium stature (1m. 67). The hair of his head is straight or slightly wavy. He has a very elongated dolichocephalic head (the cephalic index varying from 66.6 to 71.5). The head is long and somewhat narrow, the forehead broad and receding, with overhanging brows. The eyes are sunken, large and black with prominent superciliary arches. The nose is flat, often concave, sunken at the root, where it is very thin, and very much enlarged at the

the level of the nostrils. The skull is abnormally thick and the cranial capacity is low (1350 c. c.). The mouth is large and the lips thick but not protuberant. The teeth are large, strong and white. The bones are delicately formed. The arms and legs are lean; especially the calf is lacking. But the body may be corpulent. The muscular development is poor. The lower jaw is heavy. Prognathism is moderate. The cheekbones are somewhat high and the chin is small and receding. The pilous system is well-developed over the whole body. The hair is long, coarse, black or dark auburn. Men have luxuriant beard.

The Austriacs are very primitive. They still live the lives of neolithic age. Their food was the meat of the animals they killed in the chase, or seeds and roots, grubs or reptiles. They never domesticated any animal, except perhaps a kind of dog—dingo. They never reared any kind of cattle. They are ignorant of the arts of agriculture. They never cultivated the soil for any food crop. Their dwellings are formed of the branches of trees or hovels of piled logs loosely covered with grass or bark. Generally wind screens of rough branches serve as shelter. In remote places both sexes are still entirely nude. They generally use spear and axe made of hard wood; the hatchets of stone and the javelins pointed with stone or bone, and bent wood as boomerang for their chase. A family or a group of families has the same hunting ground which is seldom changed and descends through the males. Thus the sons inherit their father's name and therewith the right to certain women for wives. The marriage is exogamous. It is forbidden within the same totem group, except among the Arunta tribe which also usually avoids such unions. At the death of a man his widows pass to his brother of the same totem group. Polygamy is rare, but infanticide is commonly practised. The modes of disposing the dead vary. Among some tribes a circular grave is dug and the body is placed in it with its face towards the east and a high mound covered with bark or thatch raised over it. In New South Wales the body is often burned and the ashes buried. On the Lower Murray the body is placed on a platform of sticks and left to decay. At the funeral of men there is much mourning. The female

relations cut or tear their hair off and plaster their face, forehead and body with clay marks. But at the funeral of women there is no such ceremony. The Austriacs are somber, but are capable of great affections. They take well care of their sick and the blind who are of the best fed in the tribe. In the Luritcha tribe it was customary when a child was in weak health to kill a younger and healthy one and feed the sick and the weakling on its flesh. But the Austriacs lack physical courage. In Northwest central Queensland the wife has submit to the sexual embraces of all adult clansmen of her husband at the first night of her marriage, thus proving that the woman was the common property of the clan. But the husband will beat wife for her infidelity to him, for she thereby sells his property right over her without his consent. However the husband hands his wife over for a time to his friends as a friendly hospitality without scruple, for it does not infringe on his absolute property right over her. In South Australia boys undergo three stages of initiation at their puberty. At about ten the boys are covered with blood from head to foot, several elder men bleeding themselves for the purpose, just to make them valorous warriors. At about 12 or 14 a front tooth is knocked out to the accompaniment of the booming of the bullroarer as if by an enemy. The boy is scarred with gashes cut in back, shoulders, arms and chest, and the septum of the nose is pierced to prove his endurance and forbearance. Then penis is circumcised and thus made fit for marriage and for clannish life. The front tooth of girls too at their puberty is knocked out. The ceremony is known as *Bora*. Group marriage is also known among the West Joballuks of Northwest of Victoria. This tribe is divided into two clans—the Gamutch and Krokitch. The men of the Gamutch clan are by right the husbands of all women of the Krokitch clan. In practice the old men of the tribe distribute among the bachelors of the clan the unappropriated girls of the other clan. To keep down the number of children they practise ovariectomy on women and Mika artificial hypospadias subincision (the penile urethra being laid open from the meatus to the junction with the scrotum so that semen is discharged outside during copulation) operation on men as a religious mysticism to enhance magical powers.

Australoid possibly developed in Java or Sumatra. It might be the evolution of *Pithecanthropus erectus*. From Sumatra or Java the Australoid gradually reached Australia where Talgai skull betrays its antiquity. The Australoid spread throughout Australia. But in the northwest the Negroid immigrants absorbed and pushed the Australoid to Southeast and Tasmania where they are still in dominance. But due to lack of energy and initiative they are dying out even in Australia. The Austrics and the half breeds do not exceed 75000 in number. The Australoid spread over China and Japan. In China they were pushed by the Palae Alpines to the coastal region where they have been absorbed, imparting to the Southern Chinese a swarthy complexion. Similar is also the case with the Southern Japanese. The *Ainu* is the last remnant of the neolithic Japanese population. The Australoid Ainu has been now pushed north in Yezo and southern Sakhalin. Australoid is the basic and primary factor in the Ainu. But the Ainu has received a slight mixture of the Mongoloid and also possible a diluted tinge of the Caspian. The Ainu is longheaded (cephalic index 75.2), of short stature (156-158 cm), dark eyes without Mongoloid fold, snub nose sunken at the root and with wide nostrils, long wavy black hair and abundant beard, prominent supraciliary ridges, reddish brown skin which sometimes is quite dark. These are all Australoid traits. But the short stature and slight prominent cheek bones, and reddish brown complexion are likely due to Mongoloid or Palae-Alpine admixture. According to Japanese historians the Ainu (*Asuma Yebissu*) occupied the whole of Nippon from the seventh century B. C. until the second century of the Christian era. In the seventh century A. D. they still occupied all that portion of the island north of the 18th degree of north latitude and even in the ninth century the chronicles speak of the incursions of the barbarians. The Gilyak, who occupy the northern parts of Sakhalin, Kurie Islands, the adjoining mainland coast from near the mouth of the Amur along the southern shores of the Okhotsk Sea to Uban Bay, has large elements of the Australoid. The Australoid may be traced among the Koryaks, Chukchi and among some Eskimos. Then continuing across the Bering Strait the Australoid is found as a small drift on the Pacific

coast of North America, and particularly is well represented among the Iroquois and Algonkian tribes of the Great Lakes. The Australoid from their homeland Java or Sumatra moved northward through Malay Peninsula. They spread over Thailand. Mixed with Caspians in the Mekong valley the Australoid formed the Mon-khmer peoples. Through Burma and Assam the Australoid and later the Mon-khmers spread all over India. The Australoid forms the base of Indian population. In northern India it has been amalgamated and fused with other races. But in Southern India among the lower classes it is still the dominant factor. In Puranas it was known as the Yaksha. In Ceylon it is known as the *Veddha*. In the Jhellum vally glacier bed of Mangola trimmed flakes have been found. And in the Sahan Valley in the river drift there are heaps of artificially chipped rocks, large and small cores from which scalloped core tools, flat bottomed scrapers and fine blades have been struck out. Similar stone-age implements have been found in Middle Java and at the site of Peking Man which indicates that these tools were the remains of paleolithic men who were Australoid. The Australoids streamed north along the Persian Gulf. Along the shores of the Persian Gulf there is a narrow fringe of dark-skinned curly haired primitive folk (in Mekran and Susiana), a blend of the Australoids and the Negritoes. Then across Arabia the Australoid reached Africa. In Upper Egypt Australoid crania of predynastic period have been found. From Africa the Australoid spread all over Europe. In Spain, France, South Eastern England, Belgium and in the Rhine valley Neanderthal crania of early Palaeolithic period (about 40,000 B. C.) have been found. Neanderthal is a low-skulled dolichocephalic cranium with platyrhine nose which is Australoid. A Neanderthal skull has been discovered in a cave at Mount Circeo, south of Rome, dated between 70,000 to 130,000 years ago (I. L. N. July 8-1939). Though the Australoid and Mongoloid were swept away and pushed to the north by the thrust and expansion of the Mediterraneans, yet Australoid crania, of Neolithic period are found in small proportions in Sardinia, North-Western Portugal, England, Belgium, Western Switzerland and in the Baltic region. Angles who lived in Schleswig on the Baltic

Sea show large elements of Australoid characteristics in them. The Australoid mixed with Negroids formed Chudes (Purāṇic Sudra) in Esthonia. The Chudes from the Baltic region spread upto Trans-Baikalia. They are Kurgan builders of South Russia or builders of tumuli (Kurgans) of Southern Siberia. Advancing through the Oxus the Chudes overran India, overthrew the Mahapadmas of Magadha and established the short-lived imperial fabric of famous Sudra Nanda Dynasty of Magadha.

The Mongoloid is of short stature (Im. 61) with sub-brachycephalic head (cephalic index on the living subject 83), thin straight flattened nose, flat face, prominent cheek bones, epicanthic oblique eyes, a pale yellowish skin, black straight hair and little developed pilous system. The Mongoloid babies have large bluish patches on their sacro-lumbar region, but they disappear at the age of two or three. The Mongoloid developed in Mongolian plateau.

From Mongolia the Mongoloids spread over China and Japan where the base of the populations is Mongoloid. Mixed with the Australoids, Casapians and Palae Alpines they have migrated into Americas. They form an important element of the Buriats, dominant factors of Khalkhas and Kalmuks. In the Purāṇas Mongoloid was known as Hiranya Kasipu that is *yellow man*. In the formation of the Nepalese and Assamese Nāgās the Mongoloid plays an important role. In the kitchen mittens of Denmark, Mongoloid crania have been found. Mongols by the pressure of the Caspians, Alpines and Palae Alpines have been driven to Northern Scandinavia and they are known as Lapps. In Neolithic period in Valais and Tirol of Switzerland and Morvan in France Mongoloid crania have been observed and they form a minor element in the Swiss population. In Canary Islands, Mongoloid crania are known. In Southern Africa mixed with Negroids, the Mongoloids have formed the Negrito.

Though the Mongols number today about three millions and are peace-loving pastoral people, due possibly to the pacifist Buddhistic influence, they have not been always so. In thirteenth century they dared to dominate the world and got a good

slice of it. Mongolia is a rolling arid plateau averaging three and four thousand feet in altitude, ribbed and flanked by mountain ranges. The Mongols longed for a good fertile plain as a grazing ground for their horses and to inherit that good piece of the earth. And the earth trembled as the conquering Mongoloid horsemen galloped. The Mongols are a small, sturdy squat men, thickset and strong. The rigorous climate, hot in summer, bitterly cold in winter, creates a hardy people, able to withstand privations and discomforts, but quickly succumb to the enervating influences of sedentary easy life. Owners of vast herds of horses they had unlimited transport at their disposal; breeders of best Bactrian camels they had inexhaustible supplies of building materials, for apart from a few sticks their tents—yourt—are composed of felt made from camel and sheep wool. They had no food-supply and clothing problem. For their sheep, horses and camels supplied them not only good transports, but their meat; skin and wool gave them ample food and clothing; and they moved with the army. For their protective equipment the Mongols had an armour of tanned hide in four pieces, composed of overlapping plates which were lacquered to prevent humidity. The shield was only used when on sentry duty. Their weapons comprised a lance, a curved sabre with sharpened point, suitable either for cutting or thirsting, and two kinds of bows, one for shooting from horseback and other for greater precision when on foot. The organization of the army was on a decimal basis. Each *Touman*, a division of 10,000 troops, was composed of 10 regiments of 1000 men, and each regiment of 10 squadrons and that again was divided of 10 troops of 10 men. Jenghis Khan (1162—1227), the great Mongol, after he had established his overlordship over the nomads of the Mongolian steppes, made his army victorious from the China Sea to the banks of the Dnieper. He led his expedition in China in 1208 and by 1227 he was practically the master of the whole of China where Sung Emperors had held their sway. Leaving his general Mukhali in control in China Jenghis Khan himself returned to Karakorum and set his plan for an advance towards the west. Here lay the rich and powerful empire of the Shaha of Kkwarizm (Karismian empire) which embraced what is today Turkestan, Iran and northern India. Bukhara, Samarkand, Tashkent, Nur rapidly

fell into Mongol hands. Merv, once *queen of the world*, a centre of learning and a vast agricultural wealth, based on a net work of irrigational system, Balkh—on the silk route, the great prosperous Mother of cities, Nishapur, an art centre, Herat—the abode of luxury—fell in rapid succession to the Mongol invaders. In brief space of five months Jenghis had overthrown the mighty Karismian empire. At Bamian, a great Buddhist caravan centre, Jenghis lost his grandson, and he razed the great city to the ground. But Shaha's son Jelaladdin still held out in the south for a time and made a stand on the Indus. But being defeated he jumped into the Indus 20 feet below and crossed to the other side with a number of his followers. The Mongols followed the fugitive, but failing to capture him returned to Ghazni after having ravaged the provinces of Lahore, Peshwar and Malikpur. Still Hazara, a Mongol people, live between Ghazni and Kandahar and extend towards Herat. But Jelaladdin returned with the support of Sultan Altamash of Delhi and advanced westward to Tifis. Ogdoi, the son and successor of Jenghis, sent an army of 800,000 men into Khwarizm and at the sudden approach of the hostile army Jelaladdin fled into Khurdis mountains where he was murdered by a peasant. The Mongol army then unopposed overran Mesopotamia and destroyed its marvellous system of age long irrigation. In the following year (1136) the Mongols invaded Georgia and Armenia and captured Tifis. In the spring of 1221 the Mongols had pressed on into South Russia as far as the basin of Donetz. Everywhere they established a stable military and civil administration. They had an elaborate system of espionage. In 1223 the Mongol generals Sabutai and Chepe were recalled by Jenghiz Khan and they returned by the northern end of the Caspian Sea. Schemes of European conquest were suspended owing to the death of Jenghis in 1227. Disputes over the succession retarded further expansion in the west. But in 1239 due to Sabutai's initiative Central Russia was subdued as far as Moscow. Mongols advanced against Vladimir which at length succumbed. The Mongols then stormed Kiev—the mother of cities. In Jan. 1241 Sabutai camped in the region of Lemberg—Prezemysl. In March 1241 the Mongol army crossed the Vistula at Sandomir and defeated the Polish army and took Cracow and then Breslau.

In less than a month the Mongols had covered some 400 miles, fought two decisive battles, taken 4 great cities, conquered Poland and Silesia from the Vistula to the borders of Saxony. Victorious and always advancing the Mongols marched towards Budapest. The whole Hungarian force was arranged on the Danube to resist the Mongols. But in vain. The Mongols crossed the frozen Sajo, at night struck the sleeping Hungarian army; at day break and at midday the Hungarian army ceased to exist, leaving on the battle field 70,000 dead. Budapest was captured on the Christmas day 1241, having crossed the Danube on the ice and Esztergom was taken by storm. While the Mongol generals were conquering countries, one by one, Ogdai had been living a life of ignoble ease and licentiousness which ended in his death on December 11-1241, and in the succession contest Mongol generals were summoned to Mongolia. On July 1, 1251 Mangu, the eldest son of Tule, and nephew of Ogdai was elected Khagan. With impartiality Mongol showed tolerance to the Christians, Mohamedans and Buddhists although Shamanism was recognized as the state religion. Complaints reached Mangu that dissension had broken out in Persia. Mangu sent his brother Hulagu to punish the Ismailites or Assassins who were held to be the cause of the disorder. Hulagu marched across the snowy mountains against Bagdad to attack the last Abbasid Caliph and his Seljuk protectors. On February 15th 1258 Mongols entered into Bagdad and Hulagu gave permission to his astronomer Nasiraddin to build an observatory which splendidly furnished with armillary spheres and astrolabes was erected at Maragha. Aleppo was sacked and Damascus surrendered in 1260. Hulagu was planning the capture of Jerusalem to restore it to the Christians when the news of Mangu's death reached him and he returned to Mongolia, leaving Kitboaga in command of the Syrian forces. At the assembly of notables (*Kuriltai*) which was held at Shangtu after the death of Mangu, his brother Kublai Khan was elected Khagan. Wide conquests of the Hung-nu (Huns) and the Mongols made them a mixed people. They not only took wives from the Chinese (Palae-Alpines), but also from the Persians who were mixed Aryans, Mediterraneans and Alpines; they even intermarried with European royal families. Hulagu married a daughter of Michael Palaeologus; Toktu Khan took as his wife Maria, the

daughter of Andronicus II ; and to Nogai Michael betrothed his daughter Irene. The Mongol power established in India by Tamir-ileng and Baber is known as Moghul dynasty which lasted for centuries. Akbar had scanty beard and slightly epicanthic eyes. The Mongol power established in China by Tungus is known as Manchu dynasty. Kipchak Mongol, perhaps a variation of Purānic Hiranya Kasipu, was known as the Golden Horde (Hiranya-golden ; Kasipu-man). Dait was another important Mongoloid tribe, from which Purānic **Daitya** has been derived. In Avesta Araxes was called Daitya, for the Dait Mongoloid tribe had settled there (*Vendidad* : 1.3)

The Caspians (Kāsyapas) have the heavy bony frame. They are the tallest of all races (1 m. 70). They are high skulled dolichocephals with exaggerated prominence of the supra-orbital arches. They have elongated broad face (quadrangular) with broad chin and high-bridged leptorhine aquiline nose, grey, green or hazel eyes. Their complexion was fair with luxuriant growth of beard. They possibly developed in the north-east of the Black Sea. They tattooed their body and practised polyandry. The Caspian women enjoyed a good deal of freedom. The Caspians had highly developed calves of the legs and muscular system. They have large brows which are sometimes united and thick lower lip. About 30,000 years ago, Caspian crania of Paleolithic age have been found in Moravia with mammoth bones and clay statuettes of dimpled Venuses, used possibly in fertility rites, and bears. A similar paleolithic cave bear has been found in the Isturitz cave in the Pyrenees associated with Cro-Magnons (I. L. N. March 28-1936. Aurignacian Cro-Magnon Race, 25000—16000 B. C.) From their cradle the Caspians advanced in all directions. Northward they went pushing the Australoids, Negroids and Mongoloids. In the Valdai plateau mixed with the Mediterraneans and a few remaining Australoids and Negroids they formed the Aryans. From the Baltic region they entered Germany and Scandinavia. There they were called Nordic giants, and were known as Goths (Getæ = Jutes = Punjab Jāts) and Cimbri (Vedic Samvara : possibly a northern branch of Cimmerii = Purānic Kinnara : Biblical Canaanites). Jutland (Danish Gilland) was called Cimbric Peninsula in ancient

geography. The Jutes (Iuti) invaded Great Britain in fifth century and settled in the Isle of Wight, Kent and Hampshire. Tall Caspian types with grey eyes are found in the west coast of Scotland and western parts of Ireland. Caesar mentions that the Britons (Caspians) stain their body that produce a blue colour. This gave them a terrible aspect in battle. Ten or twelve men have their wives in common, brothers very commonly with brothers (fraternal polyandry). In Greece the Caspians were known as Pelasgi, Mycenaeans, Danaus, Molossi and Tiryns. In Italy the Caspians were known as Etruscans. The polychrome terracotta Etruscan statuary of 5th century B. C. now in New York Metropolitan Museum, shows the Etruscan to be very tall, muscular, with prominent aquiline nose, and gazelle-like elongated eyes, luxuriant beard, thin long lips and elongated trunk. Their war god Zeus Areios is covered like them in a metallic armour covering the head, nose, cheeks, neck, trunk, waist and the legs. The footwear is a sandal. On the helmet there is a fine crest like the plumage of birds. Only the eyes, lips and the flowing beard is exposed (I. L. N. Aug. 30-1937).

The Pelasgi settled in Syria and were known as Philistines, Egyptian Puraseti or Pulaseti, Assyrian Palastu or Pilastu, Puranic Pulasta. After the settlement of Philistines, Palestine has been named. Danaus is the Homeric Danai, Egyptian Danauna, Danan of the Bible and the Puranic Dānava. The Caspian Molossi of Epirus was called Mleccha. From Spain the Caspians reached Africa. On the Atlas Range many tall fair-complexioned Caspians with grey eyes are found. In Algeria they are known as Berbers (Greek Barbaroi; Skt. Barbara) and Maurs (Moors). Though the Berbers have adopted Mohamedan religion, Berber women still enjoy many privileges. Among many Berber tribes the eldest daughter's son succeeds. Berber woman has a voice in public affairs. She has a right to enter into a sacred bond or agreement, the obligations of which if not fulfilled during her life become hereditary. The Berber is monogamous. Female saints are held in high honour. A religious corporation—Savai Kartus—has been ruled over by a woman, the chief's wife. In Egyptian inscriptions of 1700 and 1300 B.C.

Berbers were called Barabara (Skt. Barbara) ; they were also called Lebu and Tamahu. The Romans called them Mauri (Moors : Maurya of Magadha). In Saharan Ahaggar and Air they are known as Tuareg. The Tuaregs are monogamous. Their women are their equals in society and their superior as the repositories of tradition and learning. A man's status of noble, serf or slave follows that of his mother. A noble woman can only marry a noble man. A noble man who takes as wife or concubine, a servile or slave woman can only have servile or slave children whatever his own conditions may be. The woman's husband and her children belong to her tribe. Certain properties pass through women. Tuareg women are consulted and respected and they conserve the art of Tuareg script and their trivial history and traditions. Tuareg women move freely with men. A Tuareg maiden may select out of her suitors the one she herself prefers as her husband. They are unveiled. The Egyptian and African Caspians are generally known as Hamites. In lower Egypt they are called Copts (Gupta). In Nubia and Abyssinia there are strong Caspian factors. Galla shows dominant Caspian traits. Somali is a blend of the Caspian and the Negroid. Masai is a mixture of the Caspian, Mongolian and the Negroid. In the Caspian and the Black Sea region the Caspians were known as Scyths, Sacae (Skt. Saka). In Crimea they were known as Cimmerian or Cimmerii (Skt. Kinnara ; Biblical Gomer, Canaanites). The Babylonian Sargon Dynasty (2500-2400 B. C.) of Agade was Caspian, non-Semitic. The Semite was a blend of Caspians and Mediterraneans. The Agadians came from Central Asia where lion was not indigenous and entered into Northern Babylonia through one of the passes of Zagros Mts. not later than fourth millennium B. C. That the Agadians were not Semites is proved by the absence of common name for olive, fig and vine which are grown in Syria where Semites developed as a blend of the Caspians and the Mediterraneans but not in Babylonia. And these plants have common name in Aramaic and Arabic. The Northern part of the river plain from Erch (Warka) by the Mesopotamian steppes was settled by the Agadians and they called it *Melucha*, possibly because the Agad

Caspians was a branch of the Molossi tribe that settled in Epirus. In the fourteenth century B. C. Ras Sharma, the capital of Ugarit kingdom of Northern Syria (surrounding Beirut) is found with Mycenaean tombs furnished with finery contents of magnificence and its temples are consecrated to Baal and Dagon. The well-built spacious dwelling houses have solid walls of corner columns of fine-shaped stones. Sometimes they include as many as 20 rooms disposed in two floors round a central court which contains a well. At the sides are great stone troughs for water supply, the bread oven with a coping of beaten clay and staircase leading to the upper floor. A room on the ground floor is fitted as a bath room with a stone or terracota bath tub and a water waste, leading directly to a sink which serves also as a central drain. Many fine vases, numerous bronze weapons and statuettes of divinities and several cylinders engraved with remarkable skill in materials as hard as black haematite and a limestone stele have been found. The stele contains a tall man with elongated broad face (Caspian, type), rich beard, aquiline nose, wearing a conical cap on the head. The bronze statuette is in the standing posture in the act of hurling a thunderbolt, wearing a stone helmet with electron horns, the body covered in gold leaf the edges of which were inserted in the grooves at shoulders, arms and legs. A heavy bronze sacrificial sword and swords and daggers and 44 bodies buried in a vault have been found. The skulls are mesocephalic (I. L. N. Feb. 22-1936). **Kassites** (Babylonian *Kasshu*; Egyptian *Kush*; Biblical Cushite (11 Sam. 18. 21-23); Iranian Cossoei; Purānic Kāśya, founder of Kāsi Dynasty) ruled Babylonia from 1740-1150 B. C. The Kassite domination was overthrown by Assyrians (Asuras) who were also Caspians and whose power lasted up to the capture of Babylon by Cyrus in 539 B.C. The Kassites spread over Northern Arabia and there pushed the Alpines to the South (Minaeans and Sabaeans), crossed the Red Sea and settled in Nubia which they called after them as Kush (Purānic Kusa-dvipa). The Caspians mixed with the Mediterraneans in Syria and North Arabia formed the Semites. The **Kassites** were in Elam at the southern spur of the Zagros Range. Their Kingdom was *Kashi*,

and *Kish* was its capital. In Central Asia *Kash-gar* has been named after them. The Kassites entered India through Gilgit valley leaving Khos of Chitral behind. *Kashmir* has been named after them. From Kashmir they spread in Sub-Himalayan valleys. In Dehradun district they are known as Khasas. Then advancing through the Gangetic valley, they established their kingdoms in Kanyakubja as Kusika (Gādhi) and in Benaras known as Kāsi dynasty. *Manda* was a Cimmerian tribe. The Babylonia monarch Naramsin, son of Caspian Sargon of Agade Dynasty, had to defend his empire against the attacks of Umman-Manda (Puranic Uttara Madra=Media). In the Babylonian annals Median king is called king of the hosts (umman-troof) of the Manda. There was a Madra (Manda) kingdom in the Northern Punjab. Mandas and Murunda are mentioned in the Puranas as Saka tribes. Getae (Jutes) through Central Asia leaving behind Massa (Puranic Musika) Getae on the Aral Sea reached Northern India, known as Jats. Massa Getae practised fraternal polyandry and used to kill their sickly old parents and feast on their flesh. From Central Asia a stream of Caspians reached Tibet and Bhutan where tall heavily-framed elongated broad-faced dolichocephals are met with. Many of the Nosu (Lolo), Nashi (Moso), Chrame (Hsifan) living in Swichwan and Yunnan in Tibeto-Chinese border, show still, though mixed with the Mongoloids and Palae Alpines, prominent Caspian traits. They are tall, heavily framed, thin-nosed, elongated broad faced, fair complexioned dolichocephals. From the Tibeto-Chinese plateau—Sechwan and Yunan along the Mekong valley descended the Caspians in large numbers. The Cham and the Mon-Khmer speaking tribes—Phong, Moi, Kha, inhabiting the upland, show still the Caspian traits—fair complexion, tall stature, strong constitution, elongated broad face, dolichocephalic head, narrow high-bridged and sometimes aquiline nose. The Cham and Rade, Jarai inhabiting south Annamese upland speak languages akin on the one hand to the Malayo-Polynesian and on the other the Mon-Khmer to which stock belongs the speech of the Cambodians and Phong, Moi, Kha. The Caspian Cham sailed from the Mekong delta in open canoes of large size from island to island, and finally settled

in Polynesian Islands—Gilbert, Marquesas, Society, Tonga, Samoa, New Zealand and Hawaii. According to the Polynesian traditions, the soul (Atia) of their ancestors rested in Hawaiki (which linguistically can be connected with Java) in their eastward migrations and was forced to leave the island due to fresh intrusions of Malaysians. Polynesians have been slightly mixed with Palae-Alpines in their migrations. Yet they are light complexioned, well-built, tall dolichocephals (Maoris of New Zealand: 1 m. 68) of good appearance with broad long face, high-bridged fine nose, straight hair, long brows, black expressive eyes. The people are light-hearted, fond of dance and songs and are fond of tattooing as a religious rite. Women enjoy a good deal of sexual freedom, particularly in Tahiti. The Polynesians have evolved an alluring care-free life of semi-indolence and sensuality. And they are fast dying out by the introduction of venereal diseases by Eur-American sailors who frequent their ports and many of whom have settled there to live with these charming, gay and laughter loving Polynesian buxom wanton maids. Mon-khmer was a mixed people of Caspian, Australoid and slightly Palae Alpine. And buffalo was associated with their culture. Buffalo became the sacred animal of the Mon-khmers. It is very likely that the Caspian factors among the Mon-khmers were derived from the Cimbri (Samvara), Cimmerii (Manda) and Assyrian (Asura) tribes. At Mohenjo-daro and Harappa we find a three-faced (Trimukha) statuette with long fine nose, long broad face, long head with buffalo horn headdress in a sitting posture with erect penis, representing a Mon-khmer (Sambara-Sumbha-Sabara) deity with dominant Caspian traits. Sambara is often mentioned in the Vedas, Sumbha in the Mārkaṇḍeya Purāṇa, Sabara tribes are found in the Godavari region who use buffalo horns as their headdress in their religious and tribal war dances. In the Mārkaṇḍeya Purāṇa we find that Durgā (Virgo), the war goddess of the Mediterraneans, subdued Mahisāsura or Sumbha (Mahisha Mon-khmer people; Asura might mean Assyrian admixture of blood or simply an epithet of power). This might simply mean that the Mediterraneans conquered the Mon-khmers whose symbol was buffalo (Mahisha). In Deccan the majority of middle class people are medium statured with long and broad

face, prominent mesorhine tumid nose, long head with vertical forehead, with black open eyes and straight black hair; they were the mixed *Mahisha*—Mon-khmer peoples, Sumbha Nisumbha. The Mon-khmer language now survives in isolated patches in Yunnan, Cambodia, Wa and Palaung lands in Burma, Khasia Hills in Assam and in the Munda-speaking Chota Nagpur, thus indicating that Mon-khmer peoples once stretched from Cambodia through Irawadi basin to the Vindya Hills. A double-bladed iron sword is or was till recently used as a sword of state by the kings of Thailand; it is depicted as carried by foot-soldiers on the bas-reliefs of Angkor Wat in Cambodia, and it is still handed down as hairloom in Naga, Khasi and Kachari families in Assam. **Mundas** carry a double-bladed axe like the Mycenaeans. Munda may be corrupt form of Manda. The **Mundas** have further received mixtures of Negrito blood. The Finno-Ugrian elements of the Munda Language are due to the Palæ-Alpine mixtures of blood. The **Khasis** are of medium stature with mesocephalic head and mesorhine nose, but of light complexion and sturdy constitution. The Khasis erect menhirs or tablestones to their male and female dead ancestors. Property among the Khasi's passes by the female line and is always inherited by the youngest daughter. Social organization is by matrilineal exogamous clans. The husbands live in the houses of their wives. **Todas** living in Nilgiri Hills are Caspians, slightly mixed with the Australoids (Mon-Khmer). They worship the buffalo and herd the buffaloes. The **Todas** are of high stature (1m. 70), with dolichocephalic head (cephalic index on the living 73.1) with thin long nose (7.48), rich brown complexion, well-developed beard and pilous system. The **Todas** practise fraternal polyandry. All the brothers marry commonly all the sisters. **Nair** (Nayar: Tamil Nayadu, Naidu), a martial caste of Malabar, is also a tall dolichocephal with thin prominent tumid nose and light complexion. But though Nair is also like Toda a Mon-Khmer tribe, in it the Australoid element may be pronounced. At least its group marriage (*Sambandham*) by which a group of youths belong-in to clan have marital rights over all the maids of a different clan is similar to the Central Australian custom where the Gamutch clan men are by right the husbands of all women of

the Krokitch clan and viceversa. Among the Nairs though *Sambandam* ceremony theoretically takes place, in practice monogamy is the rule or being evolved. The Nair inheritance law by which the sister's son inherits maternal uncle's property is the same (*maru-makathyyam*) in Trobriands in the Solomon group where the Australoid factor is dominant. Matrilineal order which is also known in Melanesia, Sumatra is also indicated by many social functions which maternal uncle discharges at the birth, initiation and marriage rites (*Avanculate*). Some Singhalese of upper classes of Candy show pronounced Caspian factors in them. They are tall dolichocephals with long brows, high bridged thin long aquiline nose, fine beard, and polyandry was very common among them. The Singhalese Caspian may be vanguard of the Monkhmer or more likely to the descendants of Pulasta (*Pelagji*) who settled in South India. Caspians entered into China through the Yellow River valley; and in this region Caspian factors are found. And another important branch of the Caspian streamed forth towards the Pacific over Kirgitz, Altai and Baikal plateaus and entered into Amur basin. Among the Koreans Caspian factors are found. From Korea, the Caspians entered into Japan, where the Caspians are represented by the *Yamato* group who form the aristocracy of Japan. They are tall and slender, have long face, mesocephalic head, rosy white complexion, but with slight oblique eyes due to Mongoloid mixture. Eskimos and Greenlanders, a blend the Caspians and Mongoloids show dominant Caspian type with long head, broad face and thin nose. Iroquois and Lenape of New England show strong Caspian factors. Mayas of Yucatan are blends of Caspians and Palae-Alpines. The Tehuelche or Patagonians and Onas of Tierra del Fuego show dominant Caspian factors: they are very tall (1m. 75) with dolichocephalic head, broad elongated face, thin long nose.

The Negroids evolved in western Africa. The high skulled dolichocephalic head with the small globular forehead rests on a thick fleshy neck and hangs a little forward as the occipital foramen is farther back and the spinal column is straighter, because the pelvis is not curved toward the front but is

perpendicular. The knees are generally curved and the calves are far off, projecting a little to the side and not much developed. As the muscles of the upper leg is also undeveloped and the legs are proportionately long, the Negro appears slender and tall (1 m. 70) with cephalic index of 72. 6. The pelvis of Negress is narrow and small; the Negress has pyriform breasts. The generation organs of Negroes are large and flabby. The foot is often flat and the heelbone projects. Both the upper arm and the forearm, especially the latter, are long. The hardness of the palm of the hand is produced by the peculiar formation of the skin. The skin is thick on account of the abundance of papellæ, velvet like, soft and always cool; inspite of its dark pigment which varies from slate color to sooty black, it is sensitive to the heat of the sun. There is little hair generally. Down is almost absent. The beard grows late and only about the mouth and the chin. The Negro hair is flat, issues from the epidermis at right angles, is spirally twisted. The Negro hair feels like wool. The nose is broad, flat, and distended at the nostrils. The lips are thick and everted. The jaws are prognathous. The teeth are large. The eyes are dark-brown with yellowish cornea. Zygomatic arches are large. Cheek bones are prominent. There is a characteristic penetrating odor from the abundant sebaceous glandular secretions. Pigmentation is abundant in the mucous membranes. Even in quadroons with ivory skin and wavy hair, pigmentation patches may be observed in vaginal mucosa.

The Negroids from their West African homeland migrated eastward by the coastal region of Arabia and Iran through India to Malaya Peninsula and thence through Sumatra, Borneo, Celebes, Moluccas, New Guinea, North-Western Australia, Solomon Islands and New Caledonia. In Indonesia, Melanesia, and North Australia the Negroids and Australoids are fairly mixed with the Negritoës. The Negroid admixture is betrayed by their tall stature, pronounced prognathism, broad nose, sooty complexion and particularly by their curly, frizzly or even woolly hair according to the degree of mixture. Through North Africa the Negroids drifted northward and spread through Iberian Peninsula in later paleolithic times. Due to the pressure

of the Mediterraneans, the Negroids have been driven into mountainous isolated regions of North-western Portugal, of Murcia, Valencia and of the Pyrenees. In the Dordogne and the western edge of the Massif Central of France Negroid crania of Neolithic times have been found. In Mecklenberg in the northwest and Silesia in the southeast Negroid type in Neolithic times was in majority with a minority of Australoids on the Baltic shore. In the upland central part of White Russia (Smolensk Tula region), the Negroid factors are primary while the Mediterraneans and Caspians are secondary factors. While in the Black Sea region the Caspians and Mediterraneans and Caspians are dominant while the Negroids are secondary. The Negroids were driven in the Valdai plateau and in the Baltic region. In the Valdai plateau the Caspians and Mediterraneans mixed with a few remaining Negroids and Australoids formed the Aryans. Negroid and Caspian blends formed the Goths and this type is dominant in the White Russia population. The Chudes were formed in the Baltic region as a blend of the Australoids and Negroids, an Esthonian tribe. Chudes migrated eastward. Chudes according to local traditions occupied Siberia, especially their south western parts. Their Kurgans or barrows abound in the eastern slopes of the Urals, in the Altai valleys, on the banks of the Yenisei. In the mineral regions abandoned excavations are known as *Chude mines*. On the western spurs of the Altai certain stone Chude monuments about 5 or 6 feet high inscribed with still undeciphered characters are found. And on the banks of the sacred lakes in the Altai highlands are to be seen two rudely carved granite horsemen regarded to be the representation of Chude heroes, various objects, especially arms and copper armour, metal mirrors, jewellerys in beaten gold. Bronze vases embellished with bas-reliefs of such animals as deer, eagle, wolf and griffons show that the Chudes were possessed both of taste and great skill in metal working. The remains of canals, several miles long, the foundations of sluices and windmills bespeak a really advanced state of civilization which cultivated fruit trees that have since perished and which reared an excellent breed of swine, still bearing the name of Chude, and traditionally attributed to those ancient possessors of the land (Elisee Reclus—*Asiatic Russia* p. 317.355). Chudes through the Oxus region reached India, and

they became known as Sudra, Sydroi of Ptolemy. And then overthrowing the Mahapadmas, the Sudras (Chudes) under the leadership of Nandas assumed the suzerainty of Magadha.

The Negrito is a blend of the Negroes with the Mongoloids. It developed in the Congo region. The Negritos are of low stature (1 m. 47). Their skull is relatively short, broad (sub-dolichocephalic) and of little height. Their hair is chocolate brown, somewhat yellowish. Their hair is woolly (scanty on face and on body) and they have flat nose and thick everted lips and prominent cheeks. Prognathism is marked. Steatopygia is usually found among their women. They are generally known as pigmies as majority of them are under five feet in height. Bushman of all Negritos is noted for steatopygia. But other pigmies such as Akkas or Tiki-Tiki of the upper Nile, Affi of Momfu, Wambutti of Ituri, Batua and Akua of French Congo, Dumes of Lake Tanganika region suffer no less from steatopygia, but to a less extent. The Negritos from centre and of South Africa drifted eastward like the Negroes. Among the brachycephalic population of Southern Arabia and along the Persian Gulf Negrito elements are found. The Negritos passing through India and Assam corridor reached Melanesia, Bhils, Santals, Munda, Oaron and other aboriginal tribes have got some mixture of Negritoes during their passage through India which is betrayed by their frizzly, curly hair, prognathism and steatopygia. A Santal has been observed in Rajmahal Hills with woolly hair. Among Kadars and Palayans of Annaimalais Hills frizzly hair is not infrequent. Frizzly hair is a frequent occurrence among the Angami Nāgas. Among the Nāgas of Assam there is a large amount of Negrito blood. The Minkopis of Andaman, Sakai and Semang of Malay Peninsula, Aeta of the Philippines and Tapirs of New Guinea are the typical examples of Negritos that have been left behind in their migrations eastward.

The Palæ-Alpines with medium round head, broad face, medium nose, elongated eyes, stocky constitution and moderate pilous growth, cream complexion, black straight hair have developed on the fringe of eastern Turkestan. In early Neolithic period the Palæ-Alpines spread over Mongolia, China and Japan

and Burma where they form the base of the population. In Indo-China, mixed with the Australoids the Palæ Alpines formed the Malayas. Among the Polynesians who are dominantly Caspians, there is an element of Palæ-Alpines as far as Howaii. In Sumatra, Borneo, Mongoloid, Negrito, Australoid mixtures are no less significant. Palæ-Alpine factors are strong in Java and Bali. Yakut is a mixed race of Australoids and Palæ-Alpines. Samoeyed is a mixture of Mongoloids and Palæ-Alpines. Finns are mostly Palæ-Alpines. Tatars are mixed people, but Palæ-Alpines factors are strong among them. In the Kirgiz and Uzbek the Palæ-Alpine factors are dominant. Kalmuks are a blend of Mongoloids and Palæ-Alpines. Buriats are mostly Palæ-Alpines. Czechs show typical Palæ-Alpine features. In Switzerland Palæ-Alpines are mixed with Alpines as in Morvan (France). Throughout Central European Highland similarly they are found mixed up and they were dominant there in Neolithic times. All over the Anatolian plateau and Mesopotamia the Neolithic crania are Palæ-Alpine, who are dominated in the bronze age by the Alpines. Palæ-Alpines in Mesopotamia were known as Sumerians. The Agadians were originally unacquainted with *lion* which they called great dog (nug magh), horse which they called ass of the east or mountains, wine as the drink of life (gishtin) and the palm, the tree of Maga (miss- Magan). En-shog Kush *Anu* was the first king. This Anu (Purānic **Anu**) from ancestor worship became the heavenly father Anu or Enlil, the king of the lands. Anu's consort was Innini. The Sumerian dressed in a flounced skirt, a sheep skin with wool combed. The people are generally found seated cross-legged. The historical Sumerian period lasted from 3000 to 2500 B.C. The deltaic region was called *Kengi*. Of the Sumerian kingdom of Kengi, Sungir was the capital. Later Sungir was called Sumer (Purānic Sumeru; Biblical Shinor; Tell-Amarnan Sankhar). Palæ-Alpine **Anava** kingdom extended from the Punjab to Anga (Bengal) up to last great monarch Usinara Sibi about 1900 B.C. when it was disrupted in the centre by the terrible incursions of the Kāsi peoples (Kassite Caspians) into Gangetic plains of Baranasi and of the Kusika Gādhī peoples (Kurds—mixed Kassites) and the devastating raids of the Haihayas in order to repel and conquer these new comers. Majority of the upper middle-classes of India are Palæ

Alpines. The Palae-Alpines are gay and cheerful. They are fond of songs and dances, for which they were called Gaudharvas. They domesticated animals.

The Mediterraneans are low-skulled dolichocephals of light-boned frame of brunet complexion of moderate size (lm. 64) and of ellipsoid face with moderate fine narrow nose and gazelle eyes. In the delicacy of the cranial and facial harmony, in the pleasant curves of the form, in the absence of exaggerated frontal bosses and supraorbital arches, the type is beautiful, almost feminine and graceful. The pilous growth is moderate with fine beard and wavy black hair. The cross section of the hair of the Mediterraneans, Caspians, Aryans, Semites and Alpines is an oval ellipse—an intermediate of the cross section of the Negro woolly hair which is a lengthened ellipse and of the straight hair of the Mongoloid which is circular.

The Mediterraneans possibly developed in North Africa. And thence it spread all along the Mediterranean coast. In the upper Paleolithic in the Azilian—Tardenoisian period (10,000-7000 B.C) in Western Europe, the Mediterraneans were already driving out the Negroids, Australoids, Mongoloids and Palae Alpines to the marginal refuge areas. In the Valdai plateau area the Aryans were formed as a blend of the Mediterraneans with the Caspians (Picts whose language is like that of the Berbers) and a few remaining Australoids and Negroids. The Mediterraneans from North Africa spread over Spain, Portugal, France and Great Britain. The Mediterraneans of Long Barrows overran Great Britain in Neolithic times, supplanting the Australoids (Neanderthals). The Piltown skull found in Sussex appears to be blend of Australoids and Mongoloids. A few Caspian crania are also found which have left the dolmens. Then came the Palae Alpines from France through a land bridge which still connected it with England, and they appear in large numbers in Yorkshire and Aberdeen. Then in early bronze period of about 2000 B. C. came the Alpines (Beaker folk) of Round Barrows who drove the Mediterraneans to west central parts. As a small drift the Alpines reached eastern and northern Scotland. Then came the Celts (Goidels—Gaels), a mixed Alpine and Caspian people, with a slight infiltration of the Aryans, or at least their tongue, about 800 B.C.

in the early iron age. As Gauls they had conquered all France and pushed on southwards and westward into Spain and over the Maritime Alps into Northern Italy. After the Goidels came the invasion of another Celtic people Cymry or Brythons about 300—100 B. C. who drove the Goidels further westward. These Cymry occupied northern France under the names of Belgæ and Brythons in several waves, and invaded England, after whom Britain has been named. These invasions were checked by the Roman occupation. After the fall of the Roman power sea raiders from Denmark and Germany began to occupy Scotch and English coasts. From the fifth century onward Anglo-Saxon invaders occupied south and east of Britain and spread over the land except in the extreme north and west. Angels are a mixed people of the Mediterraneans and Australoids. And Saxons are a mixture of the Mediterraneans with the Caspians. Then came the Danes and Normans. The Mediterraneans entered into South Italy from Tunisia and Sicily. The Mediterraneans occupied the African Mediterranean coast. But they were pushed to Egypt by the Caspians who harried them in Lybian coast, then known as Lebu; now known as Berbers (Skt. Barbara; Gk. Barbaros). The Mediterraneans discovered copper and mined it in Egypt about 3400 B. C. The Mediterranean Menes (Mena) founded the First Egyptian Dynasty about 3200 B. C. by defeating the Lybian Caspians. From Egypt the Mediterraneans spread over Syria and northern Arabia where mixed with the Caspians formed the Semites. In Arabic Hadramaut Mains. (Mineans of the Greeks) ruled up to 1503 B. C. until overthrown by Caspian Sabas (Sabeans) whose queen Sheba visited Solomon (974—937 B. C.). From 3000 B. C. the Mediterranean settlement in Crete is known as Minoan Period, by the descendants of Minos (Egyptian Menes, Puranic Manu). The Minos civilization lasted in Crete from 3003—1700 B. C. which was then dominated from 1700—1500 B. C. by Mycenæans (Caspians: Pelasgi) which came from Greece, being pushed by the Aryans. The Mediterraneans in Iran were known as Turans. Being pushed by the Alpines in Iran, the Mediterraneans reached the Indus basin through Baluchistan, leaving behind there Brahui tribe which is primarily Mediterranean in race, but now mixed with Palæ-Alpine factors. In India the

Mediterraneans are known as Turvasus, Manus (Mānava descendants of Manu). There is also a Mina tribe in Rajputana which is dominantly a Mediterranean dolichocephal. In Northern India the Mediterraneans were absorbed and Mediterranean traits are found in upper Middle classes. The Turvasus were driven south where according to Puranic legends they established Pāndya, Chola and Kerala kingdoms. Even today in the south in upper classes, particularly among the Ayar Brahmins, typical pretty ellipsoid faces with ivory tint, fine nose, delicate features, gazelle eyes are not infrequently met with, superimposed on Mon-khmer base. The generic name of the Mediterraneans was perhaps an intermediate form between the Egyptian Menes or Mana, Cretan Minos, Hindu Manu, German Mannu, and from which the word *man* has originated.

The Semite is a blend of the Caspians and the Mediterraneans in Syria. The Semite has elongated ellipsoid face, medium skulled dolichocephalic head, thin aquiline nose, thin lips, retreating chin, vaulted forehead; tall (1 m. 65), lean but muscular, with fine growth of wavy hair, beard, elongated eyes, and of brunet complexion. The Semites are greedy, cruel, vindictive sensual, but daring adventurers. The history of the Semites is the woeful tale of sword, fire, tortures, fanaticism, rape and rapine. They have contributed nothing that is of constructive value, but have destroyed many things that civilization holds dear. The Semites now are much mixed peoples. In the Arabian coastal region there is much mixture with the Negroes. In Sinai Peninsula, Syria and northern Arabia, the population is still dominantly Semitic. But in Hedjaz, the people are mixed with the Alpines. In Yemen and south Arabia the Alpine factors are dominant. The Jews who are regarded as Semites have hardly any Semitic traits left in them. The Russian, Polish and German Jews—who constitute the major portion of the Jews are generally mixed Palae-Alpines and Alpines. They are known as Ashkenazim. Among the Sephardin Jews who were expelled from Iberian Peninsula in fifteenth century and who have settled in Morocco, Constantinople, Smyrna, and Saloniki there are some Semitic traits left in them. But they do not number more than 5 p. c. of the Jews. That Moroccan Jews

have dolichocephalic head with aquiline nose does not indicate anything, for the Moroccan peoples are generally Caspians. It is very possible that the Jews have been mixed with the peoples among whom they live. The predominant brachycephalic factors among the Jews may be due to Khazars (Puranic Gurjara). They were mixed Alpines and Palae Alpines. Khazars attacked Armenia in second century A. D., and occupied it with the aid of Byzantium. Khazars became the carriers of trade of the Byzantium. During the fourth century Khazars were driven from Armenia by the Persians. Khazars occupied Caucasus. But the Huns under Attila (434) brought them under his submission. However Khazars became the traders of the Huns, and Khazaria included the area between the Caucasus, Volga and the Don with Crimea (Little Khazaria). The Moslems undertook the subjugation of Khazaria (651). Eighty years of warfare followed, and in the end the Khakan, the Khazarian ruler, and his chieftains were captured and compelled to embrace Islam (737), and till the decay of the Mahamedan empire Khazaria paid an annual tribute of children and corn (737—861). Merchants from every race found protection and good faith in the Khazar cities. The Jews expelled from Constantinople sought refuge among them. The Khazar dynasty accepted Judaism in 740. At the Byzantine court the Khakan was held in great honour. The emperor Justinian Rhinotmetus took refuge with him during his exile and married his daughter (702). Justinian's rival Vardanes in turn sought asylum in Khazaria, and Leo IV (775) was a grandson of a Khakan. Khazar troops were amongst the body guard of the Imperial Court. They fought for Leo VI against Simeon of Bulgaria. And Khakan was honoured in diplomatic intercourse with the seal of three solidi which marked him as a potentate of the first rank, even above the Pope and the Carolingian monarchs. In 1016 A. D. however by the rising power of the Slavs with the aid of Byzantines, the large kingdom of Khazaria was destroyed, and the Khazars were scattered far and wide. The present Jews are most likely the descendants of these scattered Jews. And Khazars like the present Jews built great cities as emporiums.

The Aryans are a fusion product of the Mediterraneans and the Caspians with a few remaining Australoids and Negroids on

the Valdai plateau. The Aryans were tall (1 m. 70), slender with ellipsoid face, medium-skulled dolichocephalic head, blue eyes, wavy golden hair, luxuriant beard, medium variable noses. The Aryans domesticated horse. They invented iron. They cremated their dead. They burnt the widows of the chiefs on the same funeral piles of their dead husbands. They were breeders of excellent horses. They prided themselves to be called *shepherds*. This well-watered plateau is the watershed of many rivers in different directions. And through those river valleys the Aryans spread in various regions. Through Dwina the Aryans reached the Baltic region where they were known as Lithuanians and Old Prussians. From this area they migrated to Germany. And there they contested for supremacy with the Caspians who were known as Goths and Teutons, and the Alpines. Through the Dnioper valley the Aryans reached the Black Sea region and thence ascending the course of the Danube reached Albania and Greece; and another branch Northern Italy. In Greece they were known as Ionians and Achaeans; and in Italy as Romans. Through the Volga the Aryans reached the Caspian Aral Sea region. The Aral, Caspian, Azov and the Black Seas are the shrunken relics of the primitive Tethys. And the Aral and the Caspian were united in neolithic period. Their water level was much higher. They used to drain into the Black Sea. And due to an earthquake the Golden Gate (Bosphorus) was opened and the water level of both the Caspian and the Black Seas have been much lowered. From Merv (Meru) the Aryans went into two directions. Through Demavand passes the western branch entered into Iran. Through the Oxus valley and Kailasa plateau and thence through river valleys the Ikshvakus (Achaeans) descended into the Indian plains.

The Gudean Dynasty (2400—2100 B. C.) overthrowing the Agad (Caspian) peoples occupied Babylonia, coming through Zagros Range. Gudea (Puranic Gādhi) is called Issakku (Puranic Ikshvāku) and Patesi (Skt. Pati=lord, master; isa=lord; Patesi=overlord) of Lagash. Gudea, the founder of the dynasty, has a thin-nosed long-headed shaven face wearing a chlamys like cloak and a cap, as preserved in the fragment of a statue (2400 B. C.) A headless statuette of his son—Ur Ningirsu—shows a slimmer figure. The goddesses of the third Gudean

Dynasty are tall slim figures, dressed in flounced skirts, with fine long ellipsoid face and high-bridged prominent nose ; two of them have cow horns in their headdress. A copper statuette of a Patesi of mesocephalic head has also been found. The Gudeans were great temple builders. Their temples were built with brick built columns and wooden doors, secured wedged in a brick box. The administrative centers were temple precincts. In the greenstone Gudea Vase two serpents (Serpens : symbol of virility) are twined round the Tree of Life (generation), watched on either side by a bird-headed winged lion (Aquila and Leo), standing on hind legs, the body covered with stars. The Gudeans are now represented by Kurds who are mixed Caspians. Amorites were known in Assyria as Amurru, Vedic Amura (7-61-5) and in Egypt as Amar, Puranic Amara. In Babylonia it was called Martu. Amurru was applied primarily to the land and its people extending northwards of Palestine as far as Kandesh on the Orontes (11 E. B. Amorites). The Amorites were driven from Palèstine by the invasion of Khatti and Mitanni from the north. The Amorite king Khuvavash, contemporary of Naram Sin of Agade (2530 B. C.) and mentioned also in Khatti inscription is an Aryan name. During the reign of Amenemphet III of Egyptian Twelfth Dynasty (2600—1721) in the Beniahassan tomb of his name Mah, Governor Khnumhotep, there is a basrelief of 39 Amorite men, women and children, blond, tall, long-headed with blue eyes and thin lips, brought before him whom they presented with a sort of greenish ointment *masmit*—and two boxes of perfumes. They are armed with bows, javelins, axes and clubs, dressed in good taste of fringed and patterned materials. One of them plays as he walks on a lyre like that of the Hellenes. This shows that the Amorites were Aryans. In Babylonia the Amorites first settled in Sippur as merchants and mercenary soldiers. About 2057 B. C. Samu (R) Abi (Sama Rabi=tolerant sun) of Mari fought for sovereignty and he succeeded to dominate Northern Babylonia. Hammurabi or Kammurabi (Kshama Rabi=benevolent sun : 2067—2025), sixth in line, assumed the title of the ruler of Ur, Isin and Larsa. Hammurabi was a great king. Hammurabi's code (2038), based on the Gudean second king Shulgi's legal manual, is the most famous ancient systematic Law Book of Procedure. The

Amorites had literary and artistic taste. The Gilgamesh Epic is a creation of this period. The god Martu (Maruts), the patron-deity of Amurru, a form of thunder god, is found on many seals, standing with one arm a-kimbo, holding a club and is worshipped by his consort with both arms bent upwards. There are amulet figures of apes, dwarfs and naked goddesses. The goddess Bau (Skt. Sarasvati) rides the celestial waters (Milky Way), seated on two ducks (Cygnus) which symbolize certain stars. In 1753 B.C. the Khatti monarch Murshilish, not only vanquished Khalap and Khurri, but by devastating raids on Babylonia overthrew the Hammurabi dynasty, and the Kassites who served under the Amorites as soldiers in considerable numbers betrayed their masters and assumed power under Khatti suzerainty. At Mari in Mesopotamia a mural painting of the coronation has been found, most likely in the 33rd year of Hammurabi (2100 B. C.). The king, a tall slim figure with well shaven ellipsoid face putting on bracelets in his hands, a turban like headdress and dress with scalloped trimming like spreading eagle feathers, covering the upper parts of the thighs, the calves of the legs, showing high muscular development, the clothing kept in place by a three fold belt, is offering libations to fire and before possibly Shamash, a tall slim youthful figure, wearing lion cloth and holding a thunder rod in his hand against his left shoulder and his wife Ay, and Martu (Maruts), the god of the land of Amarru, followed by the master of ceremonies wearing a white cap, tightened by a two fold black ribbon, a necklace with a large pendant, an oval shaven face of brachycephalic type, prominent aquiline nose (Khatti), thin lips, a feather like white garment hanging from his shoulders, accompanied by a man with luxuriant trimmed beard, fine oval face of brachycephalic form, long eyes and brows, wearing a black cap tightened by a twofold white ribbon, leading a bull with a gold crescent and golden horn tips to sacrifice. In the central panel the king is coronated by goddess Ishtar. And water is flowing from an amphora (Aquarius) in the hands of two goddesses. There are two winged lions (Aquila and Leo) on each side with a Swastika like device in the curl of their tails (I. L. N. Oct. 30-1937).

Mitanni (Mitra = friendly, allied; anika = army; Mitrānika = allied forces or allied army) was a horse-breeding aristocracy. In

the first half or the second millennium B. C. Mitanni Aryans ruled in South Armenia, Aleppo (Khalap) and Northern Mesopotamia (Khaniagalbat). Twelfth Egyptian Dynasty (1560-1320 B.C.) in alliance with Mitannis attacked the Khattis of Syria and Asia Minor, and captured Megiddo, Kadesh, Seurya and Ardu. The land between the Orontes and the Euphrates was given to Mitannis for their formidable military aid: Thothmes III (1500-1447) was succeeded by his son Amenhetep II (1448-1422 B. C.) who was displaced by Thothmes IV (1420-1412). Thothmes IV was married to the daughter of Harri king Artatama (Ritatama = the most pious man). Tushratta, king of Mitanni, mentions in a cuneiform tablet (in Berlin Museum) which he sent to Amenhetep IV (1366-1359) that the father of his father Thothmes IV sent to his grandfather Artatama and asked for his daughter to wife. Six times did Thothmes IV make his request in vain and it was only after the seventh asking that Artatama gave his daughter to the king of Egypt as his wife. As queen of Egypt she was styled *Hereditary Princess, President of the North, Great Royal Mother-Mutemua*. Mitanni swore a treaty with Khatti, found at Boghos Keui in which the names of tutelary deities—*Mira-ashil* (Mitra), *Uruvana* (Varuna), *Indara* (Indra), *Nashattiya* (Nasatya)—are invoked. *Mutemmu's* son was Amenhetep III. Amenhetep III built a temple at Elephantine of Ram-headed Khmen with pantheistic interpretations. Amenhetep III (1412-1376) married Ti (Thi) daughter of Yua as father and Thuan as mother. Yua, father of Ti, is of Aryan type as exhibited by his best preserved mummy, now in the Cairo Museum (for photo, see N. G. M. May 1923). Ti is an exceptional beauty of pretty ellipsoid face, fine long nose, almond-shaped eyes, thin lips, hemispherical breasts, delicate hands and fingers. She is slim and of medium height. But though Amenhetep III loved Ti, Tel-el-Amarna tablets show that in the tenth year of his reign he married *Gilukhipa*, the daughter of *Shutarna* (Sutarna = son of tumult of battle), prince of Neherna, and sister of *Tushratta* (Dasaratha), Mitanni ruler. He also married, Tushratta's daughter *Tatunkhipa* with a large dowry, for a tablet in the Berlin Museum (No 296) contains a long list of wedding gifts. But Ti was King's favourite and she gave birth to a famous son **Amenhetep IV** (1376-1359) but who changed his name later

to **Akhenaton**. Amenhetep IV married his father's daughter by Mitanni wife (some say Tushratta's daughter) pretty Neferteti, who as shown in the painted limestone head in the Berlin Museum is an extraordinary beauty of Aryan type with dignity, vivacity and grace. She is tall, slender, has an ellipsoid face with thin slightly projected chin, long slender nose, curved lips, beautiful brows and eyes; she wears sandals with uplifted toe tips in the Khatti fashion. At Lochish, 25 miles south of Jerusalem, in the Egyptian Middle Temple (1420-1335 B. C.) a scaraboid with the inscription of *The Royal Wife Twi*, queen of Amenhetep III, has been found (I. L. N. Oct. 3—1936). Amenhetep IV (Akhenaton) was an Aton-worshipping Monotheist. He believed in universal brotherhood and peace. He abhorred bloodshed. Taking advantage of the pacifist tendency of the Egyptian monarch Akhen-Aton, the Khatti (Hittite) king Shubbiliuma (*Siva vile-pana*-ointment of Siva) crossed the Euphrates, and reconquered the provinces which he was forced to surrender to Artatama, king of Harri, and Tushratta, king of Mitanni. Mattiuaza (*Mati-oja*-spirited mind) son of Tushratta with the aid of some palace guards killed Tushratta. Tushratta's relative and ally Artatama intervened and made his son Shutarna (Suta-arna-son of the tumult of battle: Rv. 4. 24.4), the combined king of Harri (Arya) and Mitanni, Assyria taking advantage of the chaotic state pounced upon Mitanni and Harri. Mitanni palace was sacked, plundered and reduced into a dust heap, and the treasures which Tushratta's grand-father had brought from plundering Ashur were taken back by the Assyrian Victors with many nobles as captives. Shutarna acknowledged the suzerainty of Assurans. Mattiuaza appealed to Khatti king for help. At this Shutarna wanted to kill him. But Mattiuaza escaped and came to the Khatti court. Shubbiliuma gave his daughter in marriage to Mattiuaza on condition that her son will be the only successor to the throne; and reinstalled him on the united throne of Harri (Arya) and Mitanni. Harri (Arya) Akit Teshub (*Accita Kesaba*) fled with 200 chariots and followers, but Karandhresh (Media) king robbed them of their chariots and other belongings. The treaty tablet between Khatti king Shubbiliuma and Mitanni Mattiuaza found in Boghaskeui was signed in 1380 B. C. in which Mitra, Indra, Varuna, Nasatya are invoked as

witnesses. At Rhas Sharma, a great hall as a royal stable for horses with stone mangers has been found. The Mitannis were experts in training horses to use them in battle for war chariots. Mitanni was a dangerously powerful military state. A Mitanni tempered and hardened iron battle axe having a bronze socket with molded ornaments representing a wild boar and two lion heads from whose gaping mouths projects the blade of the axe, has been found (I. L. N. Jan. 6—1940). In the Zagros Range there were two allied tribes *Guteans* (Gādhī) and *Matiani* (Mitanni). These two amalgamated tribes coming to India formed the Kusika (Kassite) Gādhī dynasty of Kānya-Kubja.

Tochari (Tokhari; Tajiks; Puranic Tushara, Takshaka-Nāgas) was Aryan, speaking centum variety of Aryan speech. Tochari is Yuechi, Assi-Asvaka. In 300 B. C. Yuechi occupied western Kansu. The Hiungnu=(mixed Alpines) quitted their pasturages in Western China shortly after the construction of the Great Wall of China in 214 B.C, which was built to repel their attacks. Hiungnu attacked Yuechi. Yuechi conquered the green-eyed tall dolichocephals *Wusan* (Caspians) who lived in the basin of the Ili river and settled for sometime in this territory (170—140 B.C.). The Tochari then attacked Sakas (Chinese Se, Sek=Sacae) and drove them to Iran and India. In 159 B.C. Tokharians entered Sogdiana (Sudugdha) and in 139 they conquered Bactria and in the next generation they had destroyed the Greco-Bactrian kingdom and on their ruins established in Western Turkestan the powerful state Tokharia. In the middle of the first century B.C. the whole of eastern Iran (known as Tajiks) and Western India belonged to the Tocharians who ruled under the name of Kushans. The most famous of the Kushan kings was Kanishka (123—153 A.D.), the patron of Buddhism. But the principal seat of Tocharian Kushan power remained in Bactria and Samarkhand. Kushan dynasty began to decay about 320 A.D. Gupta empire rose on its ruins. In Tocharian language *Maitreya Samhita*—a Buddhist drama has been translated. Sudugdha—Sudhuka—Suliki—Sogdina—Samarkhand. Sulikhas translated *Nilakanta Dharini*, *Dhrigha Nakha Sutra*, *Besa Santara Jataka*. They followed *Sravastivāda* Buddhism in seventh century A.D. A Tocharian scholar

Avar confederation dominated the Volga steppes till 555 A. D. where they were defeated by the Turks. In 556 moving westward they dominated the country west of Caucasus. Then they moved westward to present Galicia and extended their suzerainty from the Volga to the Elbe and to the Baltic. In 567 Avars defeating Gepidae occupied Transylvania and the Danubè-Theiss basin. Their Khagan Baian made the Avars the greatest power in Europe and exacted from the Byzantine emperors an annual tribute of 120,000 gold pieces, an elephant and a bed of pure gold. In seventh and eighth centuries Avars ravaged both Germany and Italy, sometimes in conjunction with Lombards. In 799 their Khagan was baptized to Christianity near Petronel, and Avar name has disappeared from European history. But Bavaria, Baden and Saxony are infiltrated with Alpines. Poland and Bohemia, Czechs Slavika are Alpines mixed with Palae Alpines. All south Slavs and Southern Russia have dominant Alpine population. Avars who came to India as a tribe of the Sakas are known today as Abhiras or Ahirs who are found all over northern and western parts of the country, usually mixed with Australoids. And Khazars have become Gujars (Gurjara) and after them Gujanwalla in the Punjab and Gujarat in Western India have been named. They settled in Rajputana between 400-600 and migrated westwards into Gujrat.

Celts were formed as a mixed people of Alpines with the Caspian and a slight mixture of the Aryan elements, at least under their linguistic influence. The Celts were thick set brachycephalic people of medium height, aquiline nose, oval face, light auburn hair and grey eyes in central western parts of Europe. They were known as Gaels or Gauls. Through the Danube basin they occupied Anatolia. Galatians (Celts-Kelts) became Khattis, later known as Hittites. It is known that Caspian Naramsin, son of Sargon of Agad, fought a victorious battle against a coalition of kings including Pamba, king, of *Khatti*. Zipani king of *Kanesh* (*Mitanni*) and Khuvaruvash king of *Amurru*. Khatti language had its elements of centum variety of Aryan speech. One Kikkuli, a Mitanni, wrote a book in Khatti language on the management of horses and chariot races. In it *aikavartanna* (Skt. *eka-vartana*=one turning), *teravartana*

(trivartana=three turnings), *panzavartanna* (panca-vartana=five turnings) are mentioned. In the Hittite Mitanni treaty tablet of 1380 B. C. *Mitra*, *Aruna* (Varuna), *Indara* (Indra) and *Nashatti* (Nasatya - Asvins) are invoked as witnesses of the Oath. Hittite *Arunash* is sea, and *Arunash* is the name of the god. Hittite *Aknish* or *Agnish* is Vedic Agni. *Inar* (Gk. aner) is Skt Nara and for Narayana. *Arinna* is the sun-goddess = Skt. *aruna* = morning sun. In the Hittite Rameses treaty (1260 B.C.) *Indra* is transcribed in Egyptian as *ntrtj*. *Kulshesh*—the patron deity of the clan—is Skt. *kula* = clan; *isa* = lord = *kulesa* = guardian deity of the clan = Etruscan *Culsans*. Hittite *vadar* = Gk. *Udor* = Skt. *Udana*, *uda*; Lat. *und* = wave. *Eku* = 'drink' = Lat. *aqua* = water.

Hittite—Sanskrit Verb Endings

| Hittite Singular | Hittite Plural | Sanskrit Singular | Greek — | Sanskrit Plural |
|---------------------|-------------------|----------------------|------------|--------------------|
| 1. Jami | Javeni | Yāmi | Tithemi | Yāmah |
| 2. Jashi | Jatteni | Yāsi | Tithes | Yātha |
| 3. Jazi | Janzi | Yāti | Tithesi | Yānti |

Khatti had brachycephalic head, aquiline nose, sloping forehead, flattened occiput. Khatti kept pigtail under a conical hat. His shoe had upturned toes, indicating that the Khatti migrated from a snowy land. Though the capital of Khatti was Boghaskeui by 2000 B. C. the Khatti dominion extended up to Carchamish (Jorablus) on the west bank of Euphrates. By 1758 B. C. the Khatti was the most dominant power in Asia Minor and not only vanquished Khalap (Mitanni), but even overthrew the powerful Babylonian Amorite Hammurabi Dynasty. By 1685 B. C. the Khattis conquered Egypt and ruled it for 511 years under the title of Shepherd Kings whom the Egyptians called Hyksos which in their language meant foreign rulers, or Hyksos may be a variation of Hekkhos, which Khyan assumed, meaning ruler of the barbarians. Aryans prided to call themselves Tamers of Horses (Asvapati) and shepherds of the people (Gopāla). The Egyptian insurgents even fought the Khattis in Syria and conquered Carchemish on the Euphrates, and by 1500 B. C. the conquest of Syria was complete with the aid of Mitanni. Taking advantage

of the pacifist tendency of the Egyptian monarch Akenaton, the Khatti king. Shubbiliuma crossed the Euphrates and reconquered the provinces which the Khattis were forced to surrender to Artatama king of Harri and Tushratta king of Mitanni due to the military victory of the Egyptian army. This caused civil war in Mitanni. To feed the ancient grudge Assyria fell upon the unfortunate Mitanni. Mattiuaza, son of Tushratta of Mitanni implored the help of Khattis. Khattis forgetting their past animosities restored Mattiuaza on his ancestral throne, driving out the Assyrians, and bringing the kingdom under Khatti suzerainty. But at this time there were great racial movements in Aegian region. Due to the advance of the Alpine Dorians, Aryan Achaeans pushed forward and dislodged the Mycenaean from the mainland. Mycenaean crossed the Dardenelles, named after one of their tribes Dardini, occupied Troy under the leadership of the Phrygians. Achaeans (Akhayawa) also made some colonies on the Anatolian coastal region which was mainly inhabited by the Mediterraneans, being pushed there by the Alpines, under the leadership of Attarissyas (Atrous, father of Agamemon). Lazpash is likely to be Lesbos, another Achaean settlement. These Achaeans like the Mycenaean (Caspian) were great sea-raiders and adventurers. The Phrygians had to fight hard to occupy and advance in the Khatti possession of the north-west corner of the Anatolian plateau. The Phrygian claim that the Khatti *hen-pecker* amazons made valiant and severe resistance. Paris, the Phrygian prince of Troy abducted blonde Helene, Achaean princess and wife of Achaean Menelaus. Abduction and rape were common occurrences of that day. Achaeans after ten years hard struggle about 1194 B. C. stormed and captured the Mycenaean stronghold Troy of bronze culture. The Achaeans rebuilt a new city on the ruins of Troy and called it Ilium. The Mycenaean—Danauna (Danans : Puranic Dānava). Palastu (Philistine : Pelasgi ; Puranic *Pulasta*), Tikkara (Tukhara), Muski (Moschoi), Tyrians (Gk. Tyrrhenes ; Egypt. Tursha ; Lat. Etrurians or Etruscans, after whose settlement Tuscany has been named and was called Etruria, and they were contemptuously termed Lat. Iterum=Heb. Iter=Skt. Itara for common people. *Itara* Mahidāsa wrote a ritual on the Rigveda which is known after his tribe as Aitareya Brahmana and

Aranyaka) and other Caspian tribes (Phyrge = Bhirgus), in their wheeled carts ovarran Asia Minor and Syria. Boghaskeui is no more the Khatti capital and is removed to Carchemish. The glorious ancient Khatti empire vanished with the fall of Carchemish itself to Assyrian Sargon II in 717 B. C. Assyrians were also Caspians like the Danans, Philistines and Canaanites who settled in Syria with their families.

The strict military and political organization of the Khatti empire is clearly portrayed in the state archives of Boghaskeui. They had a lexicon of six languages to understand the treaty obligations and documents of their allies, vassals, subject races. Their legal code was methodical, containing 200 paragraphs. Their justice was fair and impartial. Their punishment was much milder than prescribed in Hammurabi code. Mutilations and death penalty were only seldom imposed in the Khatti empire. But the Khatti code was very indulgent to sexual offences and crimes. The economic structure was based on agriculture, especially of cultivating barley (*Triticum dicoccum*), wheat, and the raising of cattle. Beer was brewed from barley malt. Bee-keeping was zealously cultivated for honey. Silver pieces of standard weight were used as a circulating medium of exchange. Property was completely private. But for its legal recognizance a piece of the land had to be dedicated to the service of the god. Any new acquisition required a similar further endowment like that. Sometime a soldier took a partner working the land and sharing in the produce. In the event of the dissolution of partnership, the associate was entitled to a definite share of the land. The population was divided into the free and slaves only. Marraige between two free persons was preceded by the giving of betrothal presents to the girl. If she changed her mind, these presents had to be returned; if the man did so he lost his money. Two kinds of marriage was customary as with the Assyrians. Woman remained in her home or went to live with her husband. If a slave made betrothal presents to a free woman, by accepting them she gets the status of a slave. The levirate marriage was compulsory. A brother (or if none, father) must marry deceased brother's wife. Father might disinherit a son, but it was required that the son's

misconduct should have been repeated. Mother put the son's clothing outside the house to notify his banishment. If the son was received back, the son had to bring some furniture which mother carried to their places. Penal public* punishments were inflicted by the state for the offences of murder, assault, abortion, incest, sodomy, kidnapping, theft, and damage. Slaves guilty of theft or arson were only mutilated. Forced labour was inflicted for misappropriation of property. The husband could punish his adulterous wife as he pleased, even with life and death; it was a private personal offence, and not a state concern. The person of a debtor might be taken as a security for debt, and the person could be released by the payment of the indebted amount by any one. Khatti become Kshatriya Purus in India.

3.—ANIMALS OF BHARATAVARSHA

Aja—Goat—was sacrificed even in *Asvamedha yajna* (Rv. 1, 162, 3; Vs. 25, 26); in other offerings (Av. 4, 14; 9, 5; Vs. 19, 89; 21, 40; 28, 23). In making fire pits the head of a goat was placed with the heads of horse, bull, rams, (Vs. 13). In funeral ceremony a kid's head was placed on the dead body in funeral pyre (Vs. 11, 16). And goat's milk in some ceremonies (Vs. 11, 16; s. 4, 1, 6; 5, 4, 3). **Aja**=Lith. *ozys*; Gk. *aix*; Ar. *aic*. **Asva**—Horse—was used in war (Rv. 1, 36, 8; 3, 53, 24). Horse drew chariots ((Rv. 5 58 7; 9 112 4) and war chariots, (9, 12, 1). Two horses (2, 24, 12; 6, 47, 9) and even ten (8, 3, 23; 8, 46, 23) horses were used in drawing the chariots. Ropes tied the neck of horses (7, 104, 6). There were horse races 10, 97, 3; 10, 143, 1-2) and horse back sides were whipped with lashes (6, 75, 13). Horses were massaged (1, 135, 5) and given baths (8, 2, 2; before war 9, 82, 2). Tired horses were given rest and drinks (2, 13, 5). Sick horses were nursed (1, 117, 4). Grass was the food of horses (6, 3, 4; 7, 3, 4). Horses carried loads (3, 38, 1) and grains (1, 30, 17; 7 37 6). Horses were sacrificed (1, 162, 163). Fountain sprang up from the hoof of horses (Pegasus: Ait. Br. 51). **Asva**=Avestan *Aspa*, Lith. *Aszwa*, O. Slavic *Ehu*;

Gk. *Hyppos* ; Lat. *Equus*, Teutonic *Ehu*, Tocharian *Yakwe*. Skt. *asu* ; Gk. *Okys* ; Lat. *acer*, from which *Asva* has been derived means swift runner. **Akhu**—Mouse (*Mus decumanus* Pallus) was destructive to barley grains (Av. 6, 50, 1), and Soma was prayed to destroy it (9, 67, 30). **Uddalaka** (Av. 3, 29) was *Ovis vignei* Blyth. **Udra** (Vs. 24, 37 ; Ts. 5, 5, 20) is *Otter*—Lat. *lutra*—Lith. = *udra* Avestan *udra*, O. Slavic *vydra*, Teutonic *ottir* = Cymbric *otter* = Greek *ydros*. **Ushtra** (camel) was used in war and as a carrier of food grains (1, 138, 2 ; 8, 46, 28). **Riksha** (Bear) was sacrificed (Vs. 26, 36). *Rikshas* are *Ursa Major* and *Minor* (1, 24, 10). *Riksha*—Greek *arctos*, Lat. *ursus* ; Alb. *ari*. Arm. *arj*, Tocharian *yurs*. "Impetuous like a bear (*Riksha*) O Maruts, is your rush, terrible like an enraged bison (*Gaur*=*Bos gaurus*).

Rishya (*Boselaphus tragocamelus*) is called in Bengal Nilgāyi, Hind Ris (8, 4, 10, Vs. 24, 37). Nylgai is found in Northern India. It has short horns, a black mane, a greyish brown colour and a bunch of long hair on the throat. **Ena** (Av. 5, 14, 11 ; Vs. 24, 36) is *Krishnasāra* (*Antilope cervicarpa*). **Kapi** (monkey) injures dogs (Av. 3, 9, 4). *Brishakapi* (Giant Monkey) is *Monoceros*. *Indrāni*, the queen of the heaven (Virgo), complains to *Indra* that staglike yellow *Vrishākapi* makes love to her though she is not yet deprived of her lord's (*Indra*=*Centaurus*) love, and 'no woman is pretty like me and none more voluptuous and no woman knows better than me the arts of copulation (10, 86, 6). **Kasa** (Vs. 24, 26, Ts. 5, 5, 17) is a kind of mouse (*Mus bandico*). **Kasika** (Lith. *szezkaś*) is weasel. *Bhavayavya*, chief of *Sindhu*, says of his wife *Romasā*, daughter of *Angrias Brihaspati*, the priest of *Vaisali* king : This insatiable and unquenchable woman like a weasel (*kasikā*) moistened with orgasm is giving me in her ardent embraces a hundred gratifications (1, 126, 6). **Kulunga** (Vs. 24, 27) is a kind of gazelle (*Cervus porcinus*). In *Prakrit* it is called *Kurunga* (*Gazella Bennetti*). The gazelles are noted for the lustre and soft-expression of the eyes. *Krishna* (Vs. 2, 1) is a kind of black antelope, called generally *Krishnasāra* (Black Buck). It (*Antilope cezoartica*) is an intermediate between the deer and the goat with annulated or ringed horns ; when the bucks copulate, they spring with quick plunging leaps, descending with

the forelegs rigid and the head held as low down as possible. **Krosta**. (X, 28, 4) is Jackal. This is thy riddle (O Indra). The river (Milky Way near Centaurus) flows upwards. Fox (**Lopasa** = Leo Minor) howls at the roaring lion (**Simha** = Leo). The Jackal (**Krosta** = Norma) attacks the wild boar (**Varaha** = Lupus; X, 28, 4) **Khanga** (Vs. 24, 40) is rhinoceros (*Rhinoceros unicornis*). **Gavaya** (4, 21, 8) is prayed for. **Gavaya** (Ts. 5, 5, 11) was sacrificed. **Gavaya** is **Mithan** (*Bos frontalis*). **Gardava**—**Rasava** : (ass) is the carrier of Asvins (Pegasus 1, 34, 9; 8, 85, 7). Fools have been compared with asses (3, 53, 23). Braying of donkeys is unpleasant (Av. 8, 6, 10).

Go-dhenu. √dhe = to suck; dhe-nu = milch cow. Gk. the-le = teat : thelus = female ; the-sato = he sucked ; Lat. fe-lare = to suck ; fe-mina = woman ; fi-lia = daughter. Goth. daddjan = to suck. **Usra** = cow ; without calf *vasā* ; Bull = **Vrishā**. **Ukshan** = castrated bull or steer = **Tarnak**, **Danya** and **Sanda**. Cattle with horses, sheep and goat formed the wealth of the Aryas. **Pasu** (animals : Lat. pecu ; Greek *pekos*) became *pecunia* (pecuniary). **Bharadvāja** (6, 28, 5-6) says : "To me cows are **Bhaga**, cows are **Indra**. They are the best ambrosia of **Soma**. O **Indra**, I long heartily for these cows. These cows (products of cows) fatten the lean. They develop the beauty of even the unlovely. O cows prosper my house (*griham*) with your auspicious voices. Even in our assemblies (*Sabha*) your praise is repeated". It was a delight for the Aryas to see their cows return from grazing, lowling for their calves. "As cows low to their calves in stalls, so with our songs we glorify you O **Indra** (8, 88, 1). "Like a charioteer (O **Indra**) come swiftly to us as calves rush skipping delightfully to their mothers (8, 95, (84), 1). Milk was made into curds (9, 81, 1; Av. 9, 4, 4). Milk (*paya*) and its product (*ghritan* : liquid butter) were added to **Soma** drinks (9, 31, 5). Beef and milk were the favourite nourishing food (6, 39, 1) as well as mutton, horses and goat's flesh (Av. 6, 71, 1). In ox hide (go) receptacle are kept the tawny **Soma** drinks mixed with milk (9, 65, 25-26 ; 1, 28, 9) ; **Indra** makes the ruddy or black cow yield white milk (1, 162, 9). Body was covered with garments of cow-hide (8, 1, 17). Oxen were used for ploughing barley fields (1, 23, 15). Two oxen were made to draw a waggon

(5, 27, 1; x, 85, 11). Before Agni horses (Asva), bulls (Rishabha), oxen (Ukshana), cows without calves (vasā), and rams (mesha) were sacrificed (x, 91, 14). Vrishava is constellation Taurus. "Vrishava (Taurus) and Sisumāra (Cetus) are yoked together (adjacent constellations: 1, 116, 18). Go = Avestic *gao*; Old Slavic *govedo*; Teutonic *chuo*; Arm. *kow*. English cow. Vasa (cow without calves) is Latin *vacca* (with calf), French *vache*. Dhenu (cow) = Celtic *dini*. Ukshan (ox) = Latin *urus*, Lithuanian *aurochs*, Teutonic *ouhsa*, Cymbric *ych*, English *ox*. Tarnak (steer—castrated bull: Av. 3, 9, 2)—Avestan *staora*, English steer. Gaura (4, 21, 8; Av. 20, 22, 2) is a kind of bison—*Bos gaurus*. Jatu (Vs. 24, 25) is a kind of bat (*Pteropus medius*). Jahaka (Ts. 5, 5, 18) is either hedgehog or porcupine. Tayadara (Av. 6, 72, 2) is a kind of goat, used as an aphrodisiac, possibly *Hemitragus Jemlaicus* on the Himalayan border. Tarakshu (Vs. 24, 40; Ts. 5, 5, 19) is possibly chetah leopard (*Acinonyx jubatus*). Dvipin is panther. In Atharvaveda (4, 8, 7) a king's strength has been compared with that of vyāgra (tiger), simha (lion) and dvipin (panther). Nakula (mongoose) tears out snakes (Av. 6, 139, 5). Nilasirshni is a blue-headed monkey belonging to genus *Cynocephalus*. Nyanku (Vs. 24-27) is a kind of Kuranga, *Gazella bennetti*. Pankra (Vs. 24, 26; Ts. 5, 5, 18), called also Pitva (Vs. 24, 32; Ts. 5, 5, 17); possibly also *Parasvata* (Av. 6, 72, 3; Vs. 24, 24; Ts. 5, 5, 21) whose flesh is as an aphrodisiac, is a kind of ibex, wild goat with large recurved horns: Skt. Bukka = Hind. Bukā = Avestan *buza*; Teutonic *boc*, Celtic *bocc*; Armenian *buc*. Mayu (Vs. 14, 47; 24, 31) is musk deer (*Moschus moschiferum*). Markata (Vs. 24, 30) is a kind of monkey (*Macacus rhesus*). Mahisha is water buffalo. Its meat was very much relished (5, 29, 7, 8; 6, 17, 11). Manthala (Vs. 24, 38; Ts. 5, 5, 18) is possibly vampire bat. Musha is mouse *Parsavah* (Parsa; Persis: Fars and Parsia named after them: Alpines) are harassing me, "as if pressed by rival wives (sapatni). Poverty, lack of clothing and fatigue are distressing me. My mind is restless like the flying birds. As Musha (mice) eat up *sisna* (artificial penis made out of leather) so cares are consuming me—thy praiser—O Satakratu (India), Pity us O Indra, dweller in Magha (Regulus in Leo), that is summer solstice). Be thou like father unto us (x, 33, 2-3;

1, 105, 8)—*Trasadasyu Kurusravana*. **Musha** = Gk. *mus*: Lat. *mus*; Old Slavic *misy*; Teutonic *mus*; A. Saxon *mus*; German *maus*; English mouse; Nordic *mus*; Armenian *muken*. Skt. *mush* = to steal, *musha* = a stealer, a mouse. Gk. *mus* = mouse, muscle; Lat. *mus* = mouse, *musculus* = a little mouse, muscle. **Mriga-Hastin** is an animal with hand (*hasta*) like prehensile proboscis, that is elephant. Buffalo is also called *Mriga-Mahisha* (9, 92, 6; 9, 87, 7). Indra's strength has been compared to that of Mriga-Hasti (elephant) and powerful *Simha* (lion: 4, 16, 14). Elephants eat up the forests (1, 64, 7). Wild elephant rushes furiously. The elephants (*Hasti*) and panthers (*Dvipins*) (8, 33, 9) are praised for their strength (Av. 6, 38, 2). **Nakula** (mongoose) tears out snakes (Av. 6, 139, 5) and knows plants as antidotes to snake poisoning (Av. 8, 7, 23). This attribute has been ascribed to mongoose, for it is generally free from snake poisoning, and it is the enemy of the snakes. **Mesha** (sheep) was one of the most valuable domesticated animals of the Aryas. Mutton was a prized nutrient. Sheep's wool (*urna*) was used for garment. Its skin was also used for the same purpose (Vs. 13, 15). The raiments were woven and dyed (x, 26, 6). Wool was also used for filtering soma drink (x, 50, 3). Wool was pressed into felt to lie upon as a soft bed (x, 18, 10). The fatted lambs were cooked in fire (x, 27, 17). Rams, bulls, horses, oxen and barren cows were offered for sacrifice (x, 91, 14). The virility of rams, he-goats, bulls, horses and mules have been praised (Av. 4, 4, 8). Gandhari lambs were famous for their wool. Romasā boasted to her husband Bhavayavya of Sindhu: Mount up. Embrace me closely. I am voluptuous in venery. My vulva is buxom and is covered with hair like that of the lamb of Gandhara (1, 126, 7). Because the sheep produced the valuable soft wool (*urna*), sheep were called *urna*; another name of sheep was *Avi* (8, 2, 2; 9, 6, 1). **Avi** = Old Slavic *avica*, Lith. *avis*, Gk. *Ois*, Lat. *Ovis*, Teutonic *auwi*, Celtic *Oi*. Wolves (*vrika*) were the enemies of sheep (*ura*: 8, 34, 3; 8, 66, 8). **Buru** (Vs. 24, 39) is a kind of ibex (*Cervus duvanceli*). **Lopasa** (10, 28, 4; Ts. 5, 5, 21) is Jackal, whose another Sanskrit name is *Śrigala*—Iranian *shagal*. **Babru** is used in Rigveda (x, 34, 11) in the sense of Teutonic *brun* (brown). But **Babhruka** (Vs. 24, 26) is a beaver. The beaver, an amphibious rodent,

with palmated hind feet and broad flat tail, has a brownish fur. Babhruka = Avestan *bouvi*, Old Slavic *bebru*, Lith. *bebrus*, Latin *fiber*, Teutonic *bibar*, Nordic *bjorr*, Anglo Saxon *befor*, German *befer*, English *beaver*.

Varaha (boar) has brown coloured tusks (1, 88, 5). There is also a *Varaha* in the sky (1, 114, 5 : *Lupus*) whom Indra transfixed with his thunderbolt (1, 61, 7). Dog (*Svan*) bites the ear of the boar (x, 86, 4 : *Canis Major* and *Lepus*). **Varaha** = Avestic *varaza*, Lat. *verres*, Old Slavic *ber*, Russian *borovu*, Teutonic *bar*, Anglo-Saxon *bar*. **Sukara** (swine) is to be avoided (7, 55, 4). The swine digs plant with his snout (Av. 2-27-2). **Sukara** = Avestan *hu*; Lith. *sviniza*; Gk. *hys*; Lat. *sus*; Teutonic *su*; English swine. **Vrika** is wolf. While I was travelling on foot, a brown wolf seeing me, silently fled, lowering its back, as a carpenter suffering from back-ache lowers his (1, 105, 13). **Vrika** terrifies sheep (8, 34, 3). Goats and lambs flee from *vrika* (Av. 5, 21, 5). It is a dangerous animal (Vs. 4, 34). Because it kills kids and lambs, *vrika* is called *vatsan ghātuka* (Av. 12, 4, 7). **Asvins** (Pegasus) saved *varitika* (quails : *Cygnus*) from the devouring mouth of *vrika* (Andromeda 1, 116, 14; 1, 117, 16). **Vrika** = Avestan *Vehrka*; Lith. *wilkas*, Old Slavic *vluku*, Gothic *vulks*, A. Saxon *wulf*, Gk. *lykos*, Lat. *lupus*, English wolf. **Vyagra** (tiger) is not mentioned in *Rigveda*, but in other *Vedas* (Av. 8, 5, 11, 4, 3, 1; Vs. 14, 9; Ts. 6, 2, 5) it is called a ferocious animal. Tiger is immune from diarrhoea (Vs. 19, 10). In coronation of kings tiger skin seat was used (Av. 4-8-4). **Salavrika** is hyena: "Do not trust in woman's friendship. She has the heart of a hyena (10, 95, 15). **Sasa** is hare. **Sasa** has swallowed the sharp projectile (*Kshuram*) that has been thrown against it (10, 28, 9). Possibly the **Sasa** is here *Lepus* and *kshuram* is a projection from the right hand of the Orion. **Sasa** = Iranian *sasin*, Cimbric *haas*, Tocharian *sui*, Teutonic *haso*, German *hase*; Anglo-Saxon *heare*, English *hare*.

Svan (dog) was a domestic animal and carried loads like horse, camel, and bull (8, 48, 29). Dog used to watch the house, and was its guardian spirit (*Vastoshpati* : 7, 5, 5). "When thou O **Sarama's son** (dog) showest thy tawny hued teeth, they

gleam like lance points ; then thou wouldst bite. Bark at the robber and bark at the thief (7, 55, 2, 3). A maiden in order to go to her lover unnoticed is making magic incantations to induce sleep to her parents, other inmates, and particularly the dog (7, 55, 5-8). In privations **Vamadeva** ate dog's intestines (8, 18, 13). Two dogs (Canis Major and Canis Minor), dark-hued with distended nostrils, guard the path way (the Milky Way) of *Yama*—Perseus (10, 14, 11-12). *Cvan divya* (Heavenly Dog) of Atharva Veda (6, 80, 2) is Canis Major and *Kalakanya* are the asterisms in the belt of the Orion. **Svan**—Avestan *spa*=Lith. *szu*=Gk. *kyon*=Latin *canis*=Gothic *hund*=Celtic *cu*, Arm. *sun*=English *hund*. *Simha* (lion) roars (1, 64, 8) like a thunder (Av. 1, 63, 8). Lion is ferocious (5, 15, 3). Lion was ambushed and captured (5, 74, 4). Lion sometimes escapes with the trap (\times , 28, 10). *Simha* is high, visible and brilliant and is venerated (Leo, the abode of Pitris : 1, 95, 5). **Harina** is a kind of gazelle. Harina is fleet in its movements (1, 163, 1; 5, 78, 2), but lives on grass. It has darting restless eyes (9, 32, 4). Hunters chase Harina (8, 2, 6); its meat was relished, its hide was used for wearing and for making war drums (Av. 5, 21, 7-8), and the rubbed paste of its horns was used in *kshetrāja* (hereditary diseases where there is deficiency of calcium : Av. 3, 7, 1). **Harina**=Avestan *zairina*.

Lions, within historic times, inhabited Northern Greece and Macedonia. Its range extended through Mesopotamia and Iran into the plains of Northern and Central India. They are only found now in the Gir forest of Jungadha, not numbering more than a hundred. They rest by day under cover. At dusk they come out in quest of food. Their roars are heard through the night, more noticeably at dusk and just before day break. Single lion with an attendant troop of females is usually seen. The lion drives the game and a lioness kills it, and half grown cubs when present helping. The mating season of the lion is usually between October and November and the young are born between January and February. The lioness has her first litter when she is about $2\frac{1}{2}$ -3 years old, and the young are produced at the intervals of 18 months to 2 years. The gestation period is 108 days. **Tiger** is found

in Manchuria, Eastern Siberia, Amurland, Mongolia. The most western limits of its migration appear to be the western slopes of the Caucasus and the forests of the Elburz Mountain. Southwards its range extends through China, Burma, Siam and the Malays to Sumatra, Java and Bali. It entered India through the hill ranges of Assam. It colonised the thickly forested southern slopes of the Himalays and subsequently established itself in the humid evergreen forest region of the Peninsula. But it is not found in Ceylon, which indicates that before its arrival, Ceylon was separated from the mainland. But the tiger is depicted on many seals of Mohenjo-daro. Tigers in Northern Asia assume a heavy winter coat which is shed during the spring. Similarly Indian tigers moult their finer winter coats on the approach of the hot weather. An immigrant from cooler northern China, the tiger needs shelter under cover or covert in the day from the heat, as his pad may blister from long contact with hot ground or sand. Ordinarily the tiger when hungry goes out to seek his food shortly before sunset and ends his hunting at break of the day. Cattle, various species of deer, nilgai, pig and porcupine are the common prey of the tiger like the lion. Like the lion a tiger generally disembowels the body and places the entrails to one side. It may take a tiger the best part of two hours to finish the hind quarters of a bullock. After satisfying his hunger the tiger goes to drink and then to sleep in a cool shelter. Tigers seldom roar. When they do, they roar like lions. Deep and thrilling, the repeated gusts of sound increase in volume and fill the air with reverberations. It is their mating call. They mate after the rains and the majority of the young are born between February and May. The gestation period is 15 weeks. As many as 6 cubs may be born in a litter. But not more than 2 or 3 survive. The mother tigress trains her cubs to hunt. **Panther** survives in the Kuban area of the Caucasus. In Asia its range extends from Palestine and Syria through Persia to Manchuria and Korea. Southward its territory reaches through China into Burma, Malayas, Java, the whole of India and Ceylon. It came before tiger, otherwise could not reach Ceylon. Their prey consists of various kinds of antelopes, monkeys, sheep, goats, pigs and porcupine. The commonest call of the panther is a

succession of deep intakes of air and hoarse barking coughs, an interval of a second separating each respiratory effort. The gestation period of panthers is 3 months. A pair of panthers in captivity had three litters in $2\frac{1}{2}$ years. The sexual activity in the female recurs shortly after the production of a litter. Having acquired a mate, the procreative impulse overcomes all accustomed considerations for secrecy and silence. Mating may continue even after pregnancy. In a lioness in captivity periods of rut about a week in duration occurred at intervals of three weeks till the animal became pregnant. **Leopard** (Cheetah) is found in Turkestan and Transcaspian. In South-Western Asia, its range extends from Iran, Mesopotamia, Syria, Palestine, Africa, Afganisthan, Baluchistan, Sind. When captured young, it can be tamed. The Striped Hyena is found in North and East Africa, Asia Minor and India. The **Brown Bear** (*Ursus arctus*) is found over the temperate regions from Spain to Japan. It can be trained to dance to music. The species exhibited by Indian jugglers is the Sloth Bear (*Melurus labiatus*) which lacks a pair of upper incisors.

B.—B I R D S.—**Vaya** (bird) nests upon the tree at night (x, 127, 4), and with the dawn birds fly forth from their resting places (6, 64, 6). **Alaja** (Vs. 24, 34, Ts. 5, 5, 20) is possibly *Spilornis cheela*. **Alıklava** is an owl, feeding on carrion. "Make not our bodies (O Rudra) for the *sunā* (dogs), *krostu* (foxes), *Alıklavas* (owls), *Gridhra* (vultures) and *Krishna* (crows : Av. 11, 2, 2.). "Let the *Alıklavas* (owls), *Jaskamada* (buzzards), *Gridhra* (vultures), *Syena* (falcons) and *Dhvuksha* (kites) and *Sakuni* (hawks) satisfactorily identify us among the fallen (before they devour us : Av. 11, 9, 9]. *Alıklava* = *Gyactus barbatus hemachalanus* ; *Jaskamada* = *Sarcogyps calvus* ; *Gridhra* = *Neophrons perconopterous* ; *Syena* = *Falco peregrinus* ; *Dhvankshaka* = *Corvus Corax lawrencei* ; *Krishna* = *Corvus corone orientalis* ; *Sakuna* (Gk. Kuknos) = *Gyps indicus nudiceps*. **Ati** is (Vs. 23, 24) is Bengali *Sālika* (*Acridotheres ginginianus*). **Ati** is a kind of wild duck (*Anas boschas*). **Urvasi** says to **Pururavas** : Apsaras (celestial nymphs) like ducks (**Ati**) show the beauty of their body, but in their amorous sports like horse they nibble with their teeth (10, 95, 9). **Ati** = *Lith*.

antis—Teutonic *anut*, Nordic *ond*, Latin *anas*, Gk. *nessa*, Spanish *anade*, English *duck*. **Ulu**ka is owl. It feeds on cadavers. "Devour the enemy like owls (*Ulu*ka), owlets (*Susulu*ka), dog and carrion crows (*Kokoyata*). Destroy him like an eagle (*suparna*) or vulture (*gridhra*) 7, 104, 22). The screeching of the owl is inauspicious (10, 165, 4). *Ulu*ka is the messenger of misfortune and death—*Nirriti* (Av. 6, 29, 2). Being messengers of death, consequently of ancestors, the snow-owl became sacred to the Caspians, especially of Artemis. It was also sacred to Ishtar, and is still associated with the Hindu Lakshmi (*Tyto alba jaradica*. *Ulu*ka—Lat. *uhula*—Teut. *wela*, Anglo-Saxon *ule*, Ger. *eule*, English owl). **Kaka**ra (Vs. 24, 20) is a hen (*Gallus bankiva*). **Kanka** (Vs. 24, 31) is a kind of crow (*Ardea cinera*). **Kapinjala** (Vs. 24, 20; Ts. 5, 5, 16) is a kind of partridge (*Frakolin* partridge) which appears in the spring like *chakara* (*Alectonis graeca chukar*) which is described as *Kakara* (Vs. 24, 20). *Kapota* is dove. *Kapota* has been praised for its copulating power and propensity (1, 80, 4). Dove has been found associated with the Mother Goddess of Crete, Babilonia Mohenjodaro. *Kapotas* and owls are messengers of death (\times 1-66, Av. 6-29-2). The constellation Perseus (Yama) is represented holding a severed head of Gorgon in his left hand, and waving a sword (Yama Danda) in the right hand, his legs have the wings of pigeons. *Columba* [pigeon] is also near the hind of feet of *Canis Major*, which is also the messenger of death. *Kabalinga* (Vs. 24-20) is quail. Fly away *Yakshma* (the spirit of consumption) with bluejay (*Chasha*) and king-fisher (*kikidivi*). Fly away with wind's impetuous speed, and vanish with the storm (\times , 97, 13). *Kirsa* (Ts. 5, 5, 10) is possibly the singing bird *Psittacula cyanocephala* (*Suka*). *Kulika*—*Pulika* (Vs. 24, 24) is *Calendrella branchydoctyla*. *Kuwaya* (Vs. 24-39; Ts. 5-5-7) is the water fowl—*Larus ridibundus*. *Krishna* is kite—*Corvus corone orientalis*. "Whatever wounds *Krishna* (kites), *Sakuna* (hawks), ants (*pipila*), snakes (*sarpa*) and *svapada* (jackal) have inflicted, let *Agni* who devours everything, cure them (\times , 16, 6). *Krauncha* (Vs. 24-22; Ts. 5-5-12) is wood-cock (*Numenius arquata*). **Krikavaku** (Av. 5, 31, 2; Vs. 24-35) is the domesticated cock. Its virility has been praised (Av. 20. 136-10). *Khargala*,

(7-104-17) is owl. **Khvinka** is a kind of a kite. "Let spotted carrion-eating kites (*khvinka*) devour him (\times , 87-7). **Gridhra** (vulture) can fly very high (1-118-4) and its eyes are very sharp (\times , 123-8) and feed on carrion (Av. 10-11-8). **Goshadi** (Vs. 24-24) sits on the cattle and eats the bodily parasites—known as *Salika* (*Acridotheres tristis*). **Chakravaka** (Brahmany duck—*Casarea ferruginea*) is noted for its conjugal fidelity and the pair lives together (11-39-3); Unite this pair, O Indra like two *chakravakas*; let them with their progeny, well-homed, live out all their life-time together (Av. 14-2-64). It is said in Tibet that if one of these ducks is killed, the other pines to death, as it cannot bear separation. **Tittiri** (Vs. 24, 20) is a partridge (*Francolinus interpositus*). **Paravat** (Vs. 24-25) is a pigeon. **Datyauha** (Vs. 24, 25; Ts. 5, 5, 17) is kind of pigeon—*Gallinula chloropus*. **Pika** (Vs. 24, 39; Ts. 5, 5, 15) is cuckoo. It lays eggs in the nests of other birds for it is called *Amyavap*. It is the favourite bird of Kāma (Eros). **Puskarasada** (Vs. 24, 31) is a kind of crane. **Paingaraja** (Vs. 28, 38; Ts. 5, 5, 12) is a gull. **Plava** (Vs. 24, 34; Ts. 5, 5, 20) is heron. **Madgu** (Vs. 24, 22; Ts. 55, 10) is a kind of stork. **Mayuri** (peahen) destroys poisons of snakes (1, 91, 14; Av. 7, 26, 7). **Mayura** (Vs. 24, 53; Ts. 2, 2, 16)—the peacock is noted for the beauty of its plumage. **Ropanaka** according to Sayana is *Salika* with yellowish beak—*Acridotheres tristis*. Let my jaundice (*hariman*) be transferred to parrots (*suka*) and starlings (*ropanaka*); or let this jaundice be transferred to yellow water-wagtail—*Chloropsis aurifrons* (*Haridrāva*—Gk. *Karadrios*: 1-50-12). **Suka** (parrot) is noted for reproducing names and words, if taught. **Lava** (Vs. 24, 27) is Turnix tanki. **Lopa** is (Ts) is carrion crow—*Sarcogyps calvus*. **Vartika**—Gk. *ortyx*; Lat. *coturnix*, Teutonic *vahtala*; German *Watchtel*; Toch. wolch; Eng. wagtail. **Vahasa** (Vs. 24, 34), builds a nest hanging from the tree—*Ploceus philippinensis* known in Bengali as Babui. **Susuluka** (7, 104, 22; Av. 8, 4, 22) is owl—*Glucidium radiatum*. **Suparna** is Eagle. **Suparna** brings Soma (ambrosia) like Syena to man (4, 26, 4) It is said, that Syena stole the jar or ambrosia of heaven. The Babylonian storm-bird Zu stole the tablets of heaven. It means that as Aquarius has no first class star, Aquila has taken its place. A greenish paint, supposed to cure leucoderma

(Dhaval) is made from the bile of Suparna (Av. 1, 24, 1). **Suparna** is amorous (Av. 2, 30, 3). **Hamsa** (swan) swims in water (1, 65, 5). Hamsa has bluish back (*Nilaprishta* : 7, 59, 7; *Sarcidornis melanonotus*). Hamsa, the constellation Cygnus in the Milky Way, is the heavenly swan clothed in light (4, 40, 5). The swan is golden-pinioned and is seen in the morning sky (4, 45, 4). **Hamsa**—Gk. *Hen* ; Latin *anser* ; Teutonic *gans*. Lith. *Zasis* ; Old Sl. *gasi* ; Sp. *ganso*.

C.—A M P H I B I A.—**Sarpa** (10, 16, 6) is Gk. *Herpo* ; Lat. *serpens* ; Spanish *sierpe* ; English *serpent*. **Ajagara** (Vs. 24, 34, Ts. 5, 5, 14 ; Av. 11, 2, 25) is Python molurus or Boa constrictor. **Asita** (Av. 6, 56, 2. Vs. 24, 37 ; Ts. 5, 5, 14) is *Nia tripudians*. **Ahi** (Avestan *Azhi*) is the general name of serpent in Rigveda, but possibly in the sense of constellation *Serpens*. Only **Sarpa** is used once in Rigveda (10, 16, 6) as hurting people. **Upatirna** (Av. 5, 13, 5) is a poisonous snake—*Vipera russelli*. **Urguta** (Av. 10, 4, 13) is a big snake—*Naia bungarus*. **Kalmashagriva** (Av. 3, 27, 5 ; 12, 3, 5 ; Ts. 5, 5, 10) is the dangerous *Naia tripudians*. **Kasarnila** (Av. 10, 4, 5, Ts. 1, 5, 4) is *Dryophis mycerterizans*. **Kumbhinasa** (Ts. 5, 5, 14) is *Glanconia blanfordi*. **Kairata** (Av. 5, 13, 5)—*Bungarius ceruleus*. **Tiraschiraji** (Av. 3, 27, 2 ; 6, 62, 2 ; Ts. 5, 5, 10)—*Bungarus fasciatus*. **Taimata** (Av. 5, 13, 6) is the Babylonian dragon *Tiamat* (*Draco*). **Dasonasi** (Av. 10, 5, 17) is *Ancistrodon hypnale*. **Pridaku** throws away its skin (Av. 1, 27, 1) and has oily appearance (Av. 6, 31, 1). Possibly it is *Lachesis gramineus*. **Prisna** (Av. 5, 13) is the spotted viper *Lachesis monticola*. **Babhru** (Av. 5, 13, 5)—*Ancistrodon himalayansus*. **Lohitahi** (Vs. 24, 31) is the copper coloured *Zameus mucosus*. **Krikshamsarpi** (Av. 9, 2, 2)—*Dryophis myclerizans*. **Svitra** (Av. 3, 27, 6, Ts. 5, 5, 10) is the hissing (Av. 10, 5, 5) *Naia tripudians* (Being *Gokhura*). **Svaja** (Av. 3, 27, 7 ; Ts. 5, 5, 14) is *Vipera russelli*.

Kundrinachi (1, 29, 6 ; Vs. 24, 37 ; Ts. 5, 5, 16) is the geko. The kind that lives in walls, rafters is known as *Platyedactylus muralis*, a small carnivorous, mostly nocturnal animal with large eyes. The toes are expanded with adhesive disks by which it can run over walls and ceilings. The other frequents tree in orchards, known as *Calops versicolor*. **Krikatasa**.

(Vs. 24, 40; Ts. 5, 5, 9) is the chameleon. **Godha** (Vs. 24, 35, Ts. 5, 5, 15) and **Mahishas** (buffaloes) enter into water (\times , 28, 10). **Godha** kills **Sasas** (hares: Av. 4, 3, 6). It is mentioned in the Puranas and Jatakas that **Godha** meat cooked in sour milk is very tender and tasty. **Godhā** is the guana lizard—**Varanos salvator**. **Nakra-Makara** (Vs. 24, 35; Ts. 5, 5, 13) are dolphins and crocodiles. Though in Rigveda **Aja-ekapad**—one-footed fish-goat—is the Capricornus, in astrology Capricornus is represented by **Makara** (crocodile) like the Egyptians.

Kasyapa and **Kurma** (Vs. 24, 37; Ts. 5, 5, 17) are the tortoise and turtle. In Atharvaveda (17, 1, 27-28) **Kasyapa** has been called a luminary. In later mythology **Kurma** (turtle) is the incarnation of Vishnu. In Rigveda **Manduka** (frog) represents Cancer. But in Babylonian mythology **Pulukku** (turtle) represents Cancer. **Karkata** (Vs. 24-32) is crab—Cancer. **Manduka** is frog. At the commencement of the rain both the spotted (*prisna*) and yellowish (*harita*) **Mandukas** (frogs) croak together like the cows (lowling with their calves beside them after their return from grazing) or the chants of the priests (*Brahmans*) at the Soma rites (7, 103). But the *Advaryus* (planets) shine throughout the year, while the **Manduka** is hidden in the rains (Monsoon commences with the Cancer: 7, 103, 8-9). **Manduki** (10 18 14) is the female frog. In Atharvaveda (4, 15, 12) speckled frogs croak by the water, and intermittent fever (*Sayirāma Jvara*) is asked to transfer itself to frogs (Av. 7, 116, 2).

D.—FISHES.—**Matsya** (Avestan *masya*) is only mentioned once in Rigveda (\times , 68, 8). He observed the enclosed honey (*madhu*) as one eyes a fish (*matsya*) in scanty water. **Andhaki**—mud eel. I grasped the the head of the snake as a fisherman (*Paunjishta*) catches **Karvara** (Av. 10, 4, 19). And going in the middle of the river I washed away the poison of the snake. **Karbara** is possibly Nepalese *Kabri*—*Psenedcheneis sulcatus*, found in swift mountain streams with a stony bed. The climbing perch—*Anabas scandeus*—is also called in Hindi *Kobhai* (Beng. *Koi*). **Jasha** (Av. 11-2-25; is *Oreinus siniatus*. **Mahamatsya** (Sat. Br. 14, 11, 17-1) is **Mahseer**—*Barbus putitora*, the great tasty and sporting fish

found in mountain streams. **Raja** (Av. 11, 2, 25)—Catla catla. **Saluka** (Av. 20, 136, 1) the muddy fish—*Ophicephalus striatus* (sol).

E.—ARACHNIDS.—Urnanabha (Sat. Br. 14-1) is the spider that spins thread out of its tiny gland to form nests and traps for entangling their prey. **Karkota** (Av. 7, 56, 5-8) is the *Vricchika*—the scorpion having an elongated body and a narrow segmented tail with a venomous sting at the tip. **Sandansamukhi** (Av. 7, 56, 1) is a centipede. Common red scorpion (*Buthus tamulus*) is found in the desert regions of India. The black rock scorpion (*Palamneus swammerdami*), a very large species, is found all over India and Ceylon. **F.—INSECTS.—Arangara** is the honey bee. It is also Sarah. "*Aswins* bring them delicious honey (*priyam madhu* : 1, 112, 21)." "The Toiling bees bring honey and they hang it in the hide (honey comb) downwards (10, 106, 10)." "Like bees (*Maksha* = Avestan *makhshi*) in gathering nectar, women are expert in debauchery (10, 40, 6). *Maksha* generally means fly. *Maksha* (Lat. *musca*, Gk. *muissa*) loves honey (7, 32, 2 : 4, 45, 4). **Alpasayu** (Av. 4, 16, 9)—a fly—irritates elephants. The fly deposits eggs within the skin of the elephant. The larvae cause ulceration and irritation to allay which the elephant moves his proboscis there. With proboscis the larvae enter into the stomach and intestine and with the excretion the fly completes its life cycle. The fly is *Cobboldia elephantis*. **Upajihvika** (Av. 2, 3, 4; 6, 100, 2) is the ant. The earth of the ant-hill erected by the termites is said to be a cure of menorrhagia and leucorrhoea (flux). **Khadyota** (Ch.up.) is glow-worm. "When grasshopper's (*vrisharavas*) shrills joins with the crickets' (*chichika*) chirping sounds, like the sound of tinkling bells, *Aranyani* (the president deity of the forest), is delightful (x, 146, 2). **Javya** and **Pathanga** are boring beetle and locusts, destroyers of grain (Av. 6, 50, 1-2). **Pipilika** (Av. 7, 56, 7) are ants. **Bhringa** (Av. 9-2-22) is bumble-bee. **Masaka** (mosquito) stings cause poisoning (Av. 7-56-3). **Bagha** (Av. 6, 50, 3) is cockroach. **Vyajadhara** (Av. 6, 50, 3) is horned beetle. **Suchika** is insect that stings like needle—mosquito: biters of shoulder or of limb with needle stings are most poisonous (Av. 1, 91, 7).

G.—WORMS.—Krimis (worms) are both visible (*Drishta*) and invisible (Av. 5, 23, 6-7). The worms creep about the eyes, nostrils and teeth (causing dental Caries : Av. 5-23-3). The worms are in the trees, plants, water, cattle and even in one's intestines (Av. 2, 31, 5). *Satuna* (Av. 2, 31, 1) is Tapeworm. *Alagundu* (Av. 2-31-2) is *Dracanculus medicinensis*. *Bakhrū* are ascarides and hair and pubic lice (Av. 5, 23).

4.—PLANTS OF BHARATAVARSHA

Sanskrit *dru* is tree, and *dāru* is wood.* *Dru*=Avestan *dru*; Gk. *drys* (oak), *dory*-wood (for lance); Lat. *quercus* (oak); Old Slavic *druvo* (wood); Lith. *derwa* (resinous wood); Gothic *triu* (tree), Alb. *drū* (tree, wood), Celtic *daur* (oak). Sk. *bhurja*=Lith. *birzas*; Russian *beresa*; German *birke*; English *birch*. The birch-sheets are still used for writing sacred texts and on amulet formulas. In Teutonia beech (bece) bark sheets were used for writing, from which *book* has been derived; the Anglo-Saxon *boc* (book) is the name of birch (beech). Skt. *peta-dru* or *Pita-dāru* is the pine tree=Iranian *pit*, Gk. *pitys*; Lat. *pinus*. *Aratu* (*Oroxylum indicum*—mountain wood, growing in India) wood was used for making axles and wheels of chariots (8-46-27). Its Sanskrit name is *Syonoka*, Hindi *Arlu*. It is a small tree with terminal spikes of large fleshy lurid flowers. Its root-bark is astringent and tonic and is chief ingredient of *Dasamula* and used in diarrhea. Fig trees are not only regarded as sacred by the Hindus, but they were sacred among the Egyptians, Syrians, and even in Rome where the wild fig tree (*Ficus ruminalis*) was sacred to Romulus, like the Cedars in Libanon, Oak in Dondora in Greece and among the Teutons, mistletoe among the Druids and the ever-green Christmas tree among the Christians. Fig trees grow abundantly in the Mediterranean tropical Asia, and temperate or tropical America. *Asvattha* (*Ficus religiosa*), a large poplar leaved fig tree, grown in Lower Himalayas, Central India and Bengal, was sacred even in Vedic times. Sacrificial vessels were made out of its wood, as well as

that of *Parna* (*Palasa*—*Butea frondosa* : 10, 97, 5). **Asvattha** is the seat of the gods (*devasadana* : Av. 5, 4, 3). **Asvatta** is prayed to destroy enemies (Av. 3, 6). It yields a kind of lac. The seeds are cooling and alterative. The leaves are astringent and purgative and an infusion of the bark is used in scabies. Under its shade Gautama the Buddha attained his Buddhahood (the peepul tree). **Urumbara** (*F. glomerata*) was used to make amutets (Av. 19-31.1) and sacrificial posts (*Yupa* : Ts. 2-1.1) and sacrificial spoons (Ts. 5, 4, 7). The large tree is found in the Sub-Himalayan ranges, extending to Bengal and Central Province. The root is used in pectoral complaints and in dysentery. The bark is applied to ulcers. The fruit though insipid is used as a vegetable in the treatment of diabetes. **Nyagrodha** (*F. Bengalensis*), the common banyan tree, a very large and spreading species under whose shade the people make fairs and large assemblies. It is such a big tree (Av. 5. 5. 5.) that even five thousand soldiers have encamped under its shade. Out of its wood sacrificial cups are made (Vs. 23. 13 ; Ts. 4, 12). It furnishes lac. The seeds are considered cooling and tonic. The milky juice is used as an odontalgic. The decoction of astringent bark, which contains about 10 p.c. of tannin is used in leucorrhea. **Plaksha** (*F. hispida*) has been mentioned with *Nyagrodha* and *Parna* (Av. 5, 5,). It extends from the Himalaya southward to Central India. It is known as *Dumara*. It yields caoutchouc, and is used in hepatic, aphthous and cutaneous diseases. **Asvaghna** (*Nerium oleander*) has many virtues (10, 61, 21). It is a fragrant flowered ever-green shrub with thick lanceolate leaves which exude a milky juice when punctured. It is indigenous in Levant and naturalized in Afghanistan, India and southern Europe. *N. odorum* is an allied species, growing in Western Afghanistan and India. The root, bark, leaves, flowers and fruits as well as the milk have poisonous properties and were used by the ancients in snake bites. They contain glucosides—Oleandrine and Pseudo-curanine, having action like digitaline. The decoction of its root-bark is used to induce criminal abortion. The bark paste is used as an external application in ulcers. The sweet-scented flowers are given as an offering to gods. **Karanja** (*Pongamia glabra*) was the abode of evil spirits (1, 53, 8 ; 10, 48, 8). It is a wing-leaved

medium-sized thorny tree of tropical Asia and Australia. The flowers have beautiful scent. When dried, their decoction is used to quench thirst in diabetes. Acidulous foods, drinks and pickles are made out of its berries. The seeds yields on expression about 25 p. c. of a thick yellowish-brown bitter oil which has a marked antiseptic, cleansing and healing properties when applied to skin diseases, in scabies and ulcers. *Khadira* (*Acacia catechu*) kernel wood and *Simsapa* (*Dalbergia sisu*) were used for making pins and axles of chariots (3, 53, 19). Ploughshares and amulets were made of *Khadira* wood (Av. 10, 6, 6). *Acacias* are found in Africa, Southern Asia and Australia. *A. catechu* is a tree, seldom more than 12 feet high, is indigenous in India and Burma. *Catechu* is made by evaporating a decoction of the inner red or brownish wood of the trunk. In *Diarrhea* *catechu* is used as an astringent and tonic. It is chewed with *Pān* (betel leaves). *Kimsuka* (*Butea frondosa*) makes strong wheels of bridal cars like that of *Salmali*—the silk cotton tree—*Bombax malabarium* (10. 85. 20). Flowery branches of these trees decorated the flag-posts of the bridal chariots when travelling towards her husband's home. *B. frondosa* is 40 to 50 feet high tree with bright-scarlet flowers, yielding a fine yellow dye (*tesu*), growing in the mountainous districts of India. It is common all over Bengal, known as *Palasa*. Stick-lac is produced from exudations through punctures of the twigs made by an insect. A coarse fibre obtained from the bark is used as a substitute for oakum. From wounds made in the bark a reddish astringent juice exudes which hardens into a red brittle resin (*Kino*), rich in tannic and gallic acids used in tanning. An oil (*moodooga oil*) expressed from the seeds is used as a laxative and as an anthelmintic. The charcoal of the wood possesses decolorizing properties, and is used as a substitute for animal charcoal in the purification of alkaloids on account of its comparative freedom from saline matter. The (*Sālmali*) *Bombax malabaricum* is a large spiny tree with scentless scarlet flowers whose seeds are surrounded by silk cotton (*Kapok*) which is light and waterproof and used for making pillows, cushions, and life buoys. The nectar of the flowers is laxative. The gum (*mocharas*) contains a large proportion of tannic and gallic acids, and is used as an aphrodisiac, in menorrhagia and diarrhea.

Dhava (*Grislea tomentosa* = *Woodfordia floribunda* = *Dhātaki*) amulets were used as a charm like that of *plaksha* (*Ficus infectoria*), *Asvattha* (*Ficus religiosa*), *Khadira* (*Acacia catechu*) and *Parna* (*Butea frondosa* = *Palasa* : Av. 5, 5, 5). It is a large shrub of the natural order Lythrace with bright red flowers which yield a dye and their decoction is used in dysentery and other forms of hemorrhage. **Pilu** (*Salvadora Persica*) fruits are the food of the pigeons and doves like *Syāmaka*—the millets (Av. 20, 155, 19). It is a small tree or shrub grown in the arid regions of Abyssinia, Palestine, Persia, Beluchistan and Sind. Its twigs are used as a tooth-brush to strengthen the gum with its astringents for which it is called the Toothbrush tree. Its berries are regarded as an aphrodisiac, and are dried like currants. It is identified by some as the mustard-tree of the New Testament. **Varana** (*Crataeva religiosa* : Sans. *Varuna*) is the divine forest-tree (*deva vanaspati*), cures *Yaksmā* (Av. 6, 85, 1) and its amulet was used for virility (Av. 10, 3, 1). This tree, belonging to the order Capparidæ, is usually cultivated in the vicinity of temples in Central India, Bengal and Assam. The bark and the root of this plant is regarded as useful in calculi, and is given in the form of decoction, which promotes appetite, increases the secretion of bile, act as a laxative and removes disorders of the urinary organs. **Vikankata** (*Flacourtia sapida*) wood was used as a sacrificial fuel (Av. 5, 8, 1). Its fruits are eaten, but not palatable. Its thorns are used to open the pustules of small-pox on the ninth or tenth day. **Vibhidaka** (*Terminalia bellerica*) wood was used for making dice (7, 86, 6; 10, 84, 1) and as a sacrificial fuel (Ts. 2, 1, 5). It is a large tree, growing throughout India, Ceylon and Burma. The unripe fruit is purgative. The fully ripe fruit (*belleric myrobalan*) is astringent and tonic, and is used in diarrhea. The oil expressed from the kernel is used as a hair-tonic; it is edible, but narcotic in large quantities. **Bilva** (*Aegle marmelos*) wood was used as sacrificial posts (Ts. 2, 1, 8), and **Mahanagni** (prostitute) regards its fruits and those of *urumbara* (figs) as grand and delicious like the penis (Av. 20, 136, 15). It is a large tree. Its ripe fruit is sweet, aromatic and laxative. But the unripe fruit is astringent, digestive and stomachic. The unripe fruit either roasted, or dried and powdered, or decoction of it, is given in

chronic dysentery and diarrhea. Its trifoliate leaves, regarded as the representation of *Yoni*, are offered to the phallic god—Siva, and the tree is sacred to him. Sami (*Prosopis spicigera*) was used to engender fire through friction (Av. 6, 11, 1), and for its long slender leaves, it was regarded as beneficial for hair growth. It grows in Persia and Northern India. Its pods contain a mucilaginous pulp which is demulcent and pectoral. The bark and leaves are used for tanning. *Karshmarya* (*Gmelina arborea*) is a large tree common in lower Himalayas and in Malabar (Ts. 5, 2, 7), where its root which is a bitter tonic, stomachic and galactagogue, is used in decoction in acute gout, indigestion and anasarca, and as a demulcent in gonorrhea. Sans. Gambhar. Kakambira (*Anamirta cocculus*) is a climbing shrub with light grey bark, resembling cork in structure and cordate leaves. The reniform drupaceous poisonous berry is the *Cocculus indicus*, the source of picROTOXIN, highly narcotic bitter crystallizable bitter principle—employed for checking night sweats of phthisis and as an antidote in morphia. Hind. Kakmari. "Tear not up by the roots the Kakambira tree (6, 49, 17). Talasa (Av. 6. 15, 3) is a large evergreen tree of the temperate Himalaya (*Taxus baccata*). Its leaves are *Talispatra*, an emmenagogue, used as an expectorant in phthisis.

Ajasringi—*Arataki* (Av. 4, 37, 2, 6) is the abode of evil spirits. It is *Odina wodier* (Tamil *wudian*), a large tree, bearing fruits, resembling goat-like horns. It yields an astringent gum which is given in asthma. **Apamarga** (*Achyranthes aspera*) removes all hereditary diseases (Av. 4, 17; 4, 18, 7). It grows in Sardinia, Egypt and India. It is diuretic. It is used as a remedy in renal dropsy and as an antidote to the venom of scorpion, and as a depurative astringent. **Arundhati** promotes the growth of hair (Av. 4. 12. 5), and is a valuable healing plant. It is possibly Sans. *Eranda*—the castor-oil plant—*Ricinus communis*. It is a native of Egypt, now widely cultivated in most tropical and temperate regions. It is shrub or a small tree. The oil expressed from the seeds produces a laxative oil; when it is rubbed on the abdomen of young children it has a laxative action. A drop of castor oil in the eye will often relieve the irritation caused by a particle of sand or by granular lids. When applied to the skin no irritation results. It is also well-borne

by conjunctive acting as a protective and sedative. When rubbed on the skull, it has the reputation of promoting the growth of hair. Fomentations of the mammary glands with castor-oil plant leaves, wilted with hot water, are useful in promoting the secretion of milk. The decoction of the leaves taken internally is also a galactagogue. The oil is also used in cutaneous and rectal diseases and as an anthelmintic. The decoction of the root is used in flatulent colic, for nephritic pains and in asthma. The root bark is purgative. The plant is also cultivated for the production of silk, as some species of silk worms require its leaves as food. **Avaka** (Av. 8, 7, 9; Ts, 4, 6, 1) is an aquatic plant, known also as *Sipāla* (*Vallisneria* or *Blyxa octandra* (Av. 6, 13, 3). From the firmament he drove darkness as the gale blows *Sipāla* (now known as *Saivāla*) from the river (10, 68, 5). **Ikshu**—sugarcane (*Saccharum officinarum*)—was used as a love-charm (Av. 1, 34, 5). This plant is honey (*madhu*) born. Thy root is in honey. From honey thou art engendered. Do thou make us possessed of honey (1). Let there be honey at the tip of my tongue; honeyed be the root of my tongue. Mayest thou be altogether within my grasp. Mayest thou fulfill my desires. (2) Honeyed be my movements, my rendezvous. Let me speak honeyed words. May I be full of sweetness. (3) Than honey may I be sweeter, than the honey plant more honeyed. Of me shalt thou be fond as of honeyed branch; (4) About thee with the accompanying sugar-cane (*ikshu*) have I come in order to remove mutual hatred, so that thou mayest be one loving me, and not going away from me (Av. 1, 34). Sugar-cane is believed to have been originally of Bengal, Indo-China and Malaya Archipelago. Sanskrit *Sarkara* (candied sugar) is Persian *shakar*, Gk. *sakkar*, Lat. *saccharon*, Ger. *Zucker*, Russian *sakharu*, Arabic *sukkar*. **Munju** (*Saccharum munja*: Av. 1, 2, 1) is a rush grass, used in filtering Soma drink (1, 168, 161, 8). **Sara** (*Saccharum sara*), the pen reed of Bengal, was used in the removal of any obstruction of urine (Av. 1, 3, 1) and it is easily breakable (Av. 8, 8, 4). **Kusa** (*Poa cynosuroides*) is a kind of grass, regarded sacred, which was used to be spread out, when dried, to make soft seats and beds in Vedic times (1, 3, 3). On festival days before the doors of churches *hierochloa* holy grass—*Savastana odorata*—is strewn.

Poisonous snakes and creatures lurk amidst reeds (*sara*), *darbha* (Eleusine coracana: Av. 6, 43, 2; 19, 32, 2), *Kusara* (bush grass), *Sairya* (Gerassium grass—*Andropogon schoevanthus*). It is indigenous in the Punjab and N. W. Provinces. The oil distilled from the leaves has an agreeable odor, resembling that of otto of roses, known as *Rusa* or oil of ginger grass) and *Virana* (*Khus-khus*—*Andropogon muricatus*: It is a large grass growing in Northern and Western India whose long fibrous roots are netted to make aromatic-scented door-screens and mats) grasses (1, 191, 8). *Durva* (*Cynodon dactylon*) filaments spread out (X, 134, 5). Let *Durva* grasses bloom. Let there be lakes full of *Pundarikani*—lotuses (X. 142, 8)". Here let the lily (*Kiambu*), tenders grass (*pakadurva*) and leafy herbs (*vyalkaca*) grow (X, 16, 13). *Pushkara* (blue water-lily: *Nymphæa cyanea*) has a pleasant scent (Av. 12, 1, 24; 11, 3, 8). "As the blue waterlilies in the pond are stirred by wind, so stirred let the ten month baby descend (5, 78, 7). Asvins are crowned with blue water lilies (*pushkarasraja*: X, 184, 2; Av. 3, 22, 11). *Kumada* is the edible water-lily—*Nymphaea edulis* or *esculenta* (Av. 4, 34, 5). The *Bisa* (the root bulb of the *Padma*—*Nelumbium speciosum*), *Saluka* (the root bulb of *Nymphæa edulis*), *sapaka* the stem of water-lily: Beng. *sāplā*) and *mulali* (water-nut—*Trapa bispinosa*) are edible (Av. 4, 34, 5). *Pundarika* (X. 149, 8) is *Padma*—(*Nelumbium speciosum*). It is the sacred Egyptian lotus, producing the divine bean, Chinese water-lily, *Kamala* of the Hindus, emblem of *Laksmi*, goddess of prosperity. *Ishika* (Av. 7, 54, 4; 12, 2, 54) is the common reed *Trichoon*. *Nala* is the *Arundo Donax*—a tall reedy grass with large dense flowering panicles, growing abundantly in watery margins. "For me ten brownish oxen have come forward like *Nala* (reeds) standing upright in a lake (8, 1, 33)" "Let black hair grow on thy head like *Nala*—reeds (Av. 6, 137, 3)." As women split *Nala*—reeds—with a stone for a cushion so do I split thy penis along thy testicles (*mushka* to cause impotence: Av. 6, 139, 5)." *Garmut* (Ts. 2, 4, 4) is *Vangneria spinosa*. *Principarni* (Av. 2, 25) is the spotted leaved polypodiaceous edible fern *Hemionitis esculenta*, used against abortion. According to *Susrata* (1, 377, 17), if there is a tendency to abortion within 7 months of pregnancy,

the paste of this fern mixed with milk may prove beneficial. **Vamsa**—the spiny bamboo—is a cylindrical jointed woody glabrous shining stalk which spreads off at its nodes numerous branches clothed with greyish-green, acuminate leaves, attaining the height of 60 feet and a diameter of 4 to 6 inches at the base. "The priests have raised thee high, O *Satakratu*, like a (tall) *Vamsa*—bamboo (1, 10, 1). It was utilized to make beams for the erection of dwellings (Av. 3, 12, 6 ; 9, 8, 4). *Venu* (Ts. 5, 1, 1) is *Bambusa spinosa* with an erect spinose trunk, growing in sub-Himalayan regions. A Hundred bamboos (*venu*), a hundred dogs, a hundred hides, well tanned, a hundred tufts of *Balleaja* (a kind of grass) and 400 reddish mares are mine (8, 55, 3 ; Vāla. 7). **Vetasa** (4, 58, 5 ; Av. 10, 7, 41 ; 18, 3, 5) is the cane *Calamus rotang*, growing in sub-Himalayas and in Bengal. **Libuja** is a tendril climber. "You are a weakling, Yama. You have neither heart nor will. As a horse is easily bridled, as a tendril-climber (*libuja*) fastens round trees, so will another woman (easily) embrace you (10, 10, 18)" "As the tendril-climber completely embraces the tree, so do thou embrace me—that thou mayest love me and mayest not be going away from me (Av. 6, 8, 1)* **Madhugha** is liquorice—*Glycyrrhiza glabra*, growing in the warmer regions of Europe and Central Asia. The root has a pleasant taste and with which the taste of nauseous medicines is disguised. It is a sweatish demulcent for coughs and soar-throat. "Through the ointment of *Madhugha* (liquorice), *Kustha* (costus) and *Nalada* (nard), by the hands of *Bhaga*, I have a quick means of winning a woman's love (Av. 6, 102, 8). **Kustha** is *Haplotaxis auricula*, a species found in Kashmir, the root (*radix costi odorati*) was the costus of the ancients, and is used by the Chinese as an aphrodisiac and incense. In India from the earliest times it is used as a tonic and aphrodisiac. **Narada** is *Nardastachys Jatamansi*, indigenous in the higher altitudes of Nepal, Bhutan. Its bitter aromatic root, known as nard or spikenard (Gk., *nardos indike* of the ancients) formed one of the chief ingredients of the nard ointment, and is used as a perfume for the hair, promoting its growth and lustre. It was formerly used largely as a medicine, its properties resembling those of official valerian. A brown volatile oil obtained from the rhizome is employed in epilepsy, hysteria and convulsions.

Sana—the common flax (*Linum usitissimum*; Gk. *linon*; Lat. *linum*), an annual plant being cultivated from remote antiquity for the fibres of the bark which are manufactured into linen. The seeds which contain oil, wax, resin, extractive, tannin, gum, mucilage, starch, albumin, gluten and various salts, were used as food in ancient times, and are still eaten roasted by the Abyssinians. They are demulcent and emollient, and infused in boiling water, are used in inflammatory affections of the mucous membranes. The nucleus of the seed contains an oil—linseed oil—which is extensively used in the arts and also in medicine. "Soma is the principal (*srestha*) of the five plants—*Darbha* (Eleusine coracana), *Bhanga* (common flax), *Yava* (barley) and *Saha*—bean *Phascelus mungo* (Av. II, 6, 15).

Soma was the most important of the Vedic plants. Soma was regarded both by the Iranians (Avestan *Haoma*) and the Aryas as the elixir of life. Unfortunately its identity has been lost. Some regard it as *Asclepias acida*, *Sarcostema viminalis* or *Vitis Vinifera* with its fruits grapes—a native of the Caspian region. But these suppositions find no support from Vedic descriptive statements. "The golden-brownish twigs (of Soma: *harir ancut*: Avestan *Azus* V. 9, 16) is being pressed (into a paste between stones) and filtered through (a woolen cloth or grass mat: 9. 92. 1)". "Two arms with their ten fingers are pressing between the stones the Soma twigs with pretty digitate leaves (*somasya suhasta*: compound leaves radiating like fingers borne at the apex of the petiole), and the twigs with their digitate leaves (*Sugabhashtir*=pretty-handed) from mountains are pouring forth clear pleasant juice (5, 43, 4). Soma is many leaved (*bahutanta*: 10, 42, 8), twigs with slender leaves (*ancum tigman*: 8. 61 (72), 2). "Press the Soma between the stones, and filter it (the pressed paste) through by mixing it with water. Then what comes from the hollow-stems (*Vaksana*) will be enriched with milk (8, 1, 17)". Finest Soma grows on Mujavant, (x, 34, 1). In the midst of snowy peaks (*himavata sirah*), in the *Nāvapravramsana* (mount, where Manu's fish in the flood legend was bound, known in later Purāṇas as *Naubaudhana*: Is it Nanga Parvat of Kashmir or Demavend of Iran), there the elixir (*amrita*)

Kustha (*Haplotaxis auricula*, growing in Kashmir) grows. This *Kustha* is all-healing (panacea—*visva-veshaja*). This herb (*sakam* is found with *Soma* (or compared with *Soma* as an elixir: *Sakam somena tishati*). It removes all kinds of fevers (*Takman* = malaria) and other evils (Av. 19. 39. 8). The eleventh tablet of Gilgamesh Epic of the Hammurabi (Sans. Samarabi) period (2038 B. C.) describes fully the flood story. From this have been borrowed the Biblical Noa's arch (Gen. v-ix), Avestan Yima's vara (*Vendidad Fargard II*), fish and flood Myth of *Manu* (*Sat. Br.* 1, 8, 1, 6) and the Hellenic Deucalion ship resting on mount Parnasseis in Phocis. The soma paste pressed between stones, or by mortar and pestle (*ulukhala* : 1, 28, 3, 5-6), and mixed with water and milk (9, 86, 11; 9, 91, 2) is pushed through a woolen strainer and filtered through a grass mat. Sour milk (*dadhi* : X. 179. 3), barley water (*Yava sirah* : 1, 81 (92), 4; 9, 163-4) and honey 9, 17, 8, are added and it is a gladdening and stimulating drink among the *Sunahotras* (*Sunahotra Bharadvāja* : 2, 41, 14). *Purus* are fond of *Soma*. It grows by *Sushoma* (Sohan ?). *Saryarnavan*. In *Arjikiya* (*Vipāsa* ?) it is the best (8, 53 (64), 11). We know that Arsaces (Gk. Arsik) was a Sacae clan who lived in the desert east of the Caspian Sea and about 250 B. C. invaded Parthia and established the Arsacid Empire over the ruins of the Greco-Bactrian Kingdom.

It is most likely that the *Soma* plant is *Cannabis sativa*. For it harmonizes with the Vedic descriptions. *Cannabis sativa* is a native of Western and Central Asia, and now widely distributed and cultivated in temperate and tropical countries. It is found wild in the Himalayas and in Kashmir. It is an erect branching herb from 4 to 10 feet high with a hollow rough stem; small green or whitish axillary dicious flowers and petiolate *digitate* leaves, divided into from 5 to 9 lanceolate or linear acuminate serrate leaflets. The fruiting shoots and stalks with leaves constitute the *siddhi* (success) or *bhang*, which is made into a paste between stones or in a mortar, then mixed with milk and sugar, and sometimes made pungent by the addition of pepper, is drunk usually still by the orthodox Hindus on

New Years Day and other festive occasions. Its narcotic quality is enhanced with the maturity of fruits. The unfertilized resinous flowering shoots constitute the *ganja* which is usually smoked by Rudra-Siva devotees. But its Narcotic quality is reduced after the fertilization of the flowers takes place. The impure resin which is obtained by scrapping the tops of the plants growing on mountainous tracts 6000 to 8000 ft. high is known as *Charas*, a very powerful narcotic and which is smoked with tobacco by the habitues. *Cannabis sativa* through its volatile alkaloid—Cannabinine—is primarily stimulant, aphrodisiac with marked retentive power; secondarily antispasmodic, analgesic and hypnotic. In small doses the effects are exhilarations, intoxication and hallucination. In intoxication exaltation is the primary effect when imaginations run riot, disturbing ideas of time, space and personality. Persons unaccustomed to it are sometimes maniacally excited, even to violence and have redness and inflammation of the eyes. However in various uterine disorders it is used to relieve pains and bring about contraction of uterine muscular fibres. It is also useful in relieving pain in dysmenorrhea and menorrhagia. The spasms of asthma are often relieved by it. It is also of value as a gastric sedative in functional disorders of the stomach and bowels attended with pain, acidity and flatulence. In large doses it provokes delirium and catalepsy. Frequent uses of it bring about mental deterioration, a prolific cause of insanity.

Soma Juice is exhilarating (9, 35, 5). *Cannabis sativa* is stimulating and is an aphrodisiac and a giver of delight (9, 80, 3). Like Soma (5, 43, 4) it has digital leaves (*su-hasta*). Its stem is hollow (*vaksana* : 8, 1, 17). Rudra lives in *Mujavat* (*Apasthanba* 8, 18, 8; *MBh.* X, 17, 26). Best Soma is also found in *Mujavat* (X, 34, 1). The votaries of Rudra-Siva are addicted to *Cannabis sativa*. From these identities, it is safe to conclude that Soma is *Cannabis sativa*. Of course moon (*Soma*) was regarded as the ambrosial food of the gods and manes (*Ait. Br.* 7, 11; *Sat. Br.* 1, 6, 4, 5; *Kaus. Br.* 7, 10; 4, 4; *Chand Up* 5, 10, 1. *Matsya P.* 1, 26, 59-60). The ancients regarded the moon-beams essential for the growth of plants.

And therefore Soma plant was the representatives of the celestial *Soma* (the moon) which they thought was full of ambrosia, for which it was called *sudamsu*, and which was the food of the gods and manes. And as the gods and manes ate up and drunk the moon-ambrosia, it gradually waned; then gods and manes rest, and the moon waxes again.

5.—AGRICULTURE

The Aryans were generally a pastoral people. Their wealth consisted of their Cattle (*Pasu*=Lat. *Pecus*, *Pecuns*, Gk. *Possi*; Goth *faihu*=Cattle. From *Pecuns*, *pecunia* means wealth—Eng. *pecuniary*). But they also knew the arts of agriculture and cultivated lands and added to their milk and meat diet agricultural products and fruits. "Plowing (*vrika*=plow: Gk. *eulaka*, aratron; Lat. *aratrum*, O. Ir. *arather*, Lith. *arklas*, Ice. *ardr*, O. Bulg. *ralo*=forked stick hook plow) and sowing barley (*Yava*), o ye Asvins, thus milking out food for man, o ye experts, driving away the enemies with your trumpet, you have given great joy (*uru jyoti*) to the Arya (1, 117, 21). *Yava* (*barley*) is Avestan *yava*; Gk. *zea*; Lith. *javai*. Six-rowed Barley (*Hardeum hexastichon*) is the most ancient of cultured food-plants. It has been found in the excavations of Mohenjo-daro (3000 B. C.). It is mentioned in the Bible (*Exod.* 9. 31). The Greek Demeter (Deva *Mātā*), the goddess of harvest and agriculture and of autumnal equinox (*Virgo*) was crowned with an ear of barley on her forehead (*stachys Demetros*) and a spike (*Spica*, 1, 2 magnitude star in *Virgo*—Alpha *Virginis*—and sixteenth in order of brightness in the heavens) of barley in her left hand. The Roman prototype of Demeter—*Ceres*, the Hindu *Sri*, had two ears of barley on her head, and a basket full of barley ears near her right foot (*Wall painting from Pompei, Museo, Nazionale, Naples*). Hindu *Laksmi*, also worshipped in the autumnal equinoctial full-moon (*Virgo*), the goddess of harvest and prosperity, has

spikes of barley (in Bengal Rice—*Dhāna*) in her foot-steps like the Babylonian *Ishtar*. With vigorous steers, let our vigorous Men furrow the plough (*langalam*) vigorously. Let the furrows be well-separated with the active goad (*ashtra*) 4, 57, 4). *Suna* (plough) and *Sira* (ploughman), welcome this praise of yours. Let the heavenly milk (rain) shower on this earth (4, 57, 5). *Sita* (furrow personified), be gracious into us. We salute thee, so that thou makest us prosperous with abundant harvest (4, 57, 6). May *Indra* deepen the furrow (*Sita*), and may *Pushan* lead it (furrow) straight. Let she milk for us (produce) excellent, excellent harvests (4, 57, 7). Let vigorously *Pārjanyā* (rain god) give us milk and honey. *Suna*, *Sira*, be active to give us prosperity (4, 57, 8). The ploughshare raises food when one works with it (X, 11, 77). Fertile (*uvāra* : Gk. *aroura*) cultivated land is a blessing (1, 127, 6). Fire was made to devour the brushwood, and barren (*Khila*) land was made fertile (X, 142, 3) Wells were dug for the irrigation of fields, for the drink of men and cattle. "Fix the yokes (*yuga* : a bar of wood by which two draft animals, especially oxen are joined at the necks for working together; *yuga*=Gk. *Zugon*; Lith. *Yungas*; Slav. *Yuk*; As. *ioc*) and fasten firmly the straps. Furrows (*yanau*) are ready for the seeds (*bijam*). Give us plenty for our praises. The sickle (*srinaya*) is cutting the spikes of ripened grains (10, 101, 4). Arrange the buckets rightly and fasten to them the straps. Then we shall make the well (*avata*) pour forth its inexhaustible supply (10, 101, 5). From the well with its ready bucket suspended with strong straps I pull out water in an unending stream (10, 101, 6). "Refresh the horses (with water drinking and bathing) and win the spoils of victory. And hasten the chariots for acquiring fortune. Pull from the well the suspended wooden buckets in the stone wheel (*asma cakra* : *Chakra*=Gk. *Kyklos*; O. Slav. *Kolo*; Slav. *Hweol*) for drink of our heroes, clad in armour (10, 101, 7). Prepare the cow-stall. Then give drink to your heroes with sewn (*sivya*) thick and wide coats of armour (10, 107, 8)—*Divya Angirasa*. Sewing was known. *Raka* (the full moon personified as a goddess of child-birth) praised to give us wealth and lead us right. With never-breaking needles (*sucya*) let her sew (*sivya*)

and give us a heroic son who will acquire wealth (2, 32, 4) —*Gritsamada*. The irrigation water poured by buckets (*kosa*) and pulled round a stone pulley (*asma-chakra*) was led into broad channels (*surmi sustira*: 7, 69, 12). Water was also drawn from lakes (*rada*) and canals (*kalya*; 3, 43, 5; 10, 99, 4). But it is said that *Venya Prithu*, a Parthian, introduced agriculture in Anga (Northern Bengal). Before Prithu's time people subsisted on fruits, roots, tubers, hunting and fishing. He levelled the ground and removed the pebbles. He drove away the black pigmies (*Nishadas*: possibly the mixed Negritos, such as the Santals, Oroans, Mundas, Gonds). *Venya Prithi* (Prithu) is the composer of Rv. 10, 148. "From her (Prithivi=The Earth=land), Prithi Venya milked both cultivation (*Krishhi*) and grains (*Sasya*). Upon these two—cultivation and grains—men subsist. One who knows the arts of cultivation can successfully subsist by it (Av. 8, 10, 25)". Aryans in the beginning were mainly *shepherds* and *tamers of horses*. Hyksos who were known in Syria as *Khatti* (*Kshatriya*) were called *shepherd kings* in Egypt. There is a shepherd's prayer to Pushan—Gk. Pan, Lat. Faunus, the god of pasturage and flocks. Lead us the way, Pushan and move aside the obstruction from our path. Move us, O God, forward (1, 42, 1). The wicked mischievous wolf, O Pushan, that may be lurking to injure us, drive it away from our path (*Patha*=*Pantha*=Gk. *patos*, O Slav. *path* Tent, Fath, Russ. *puti*, Ger. *phad*; Lat. *pons*=bridge; Av. *path*. Sans. *pathika*=traveller). The waylayer and the guileful robber that is intent on mischief, from our way, chase him far away (1, 43, 2-3). "Lead us to meadows with luxuriant grass. And add no new trouble in our way. Pushan, manage this for us 1, 42, 8"—*Kanva Gharva*. "Let them (strayed cows) return. Under the shepherd (*Gopa*=cowherd) let them be content. Bring them back O Agni, and let our wealth remain with us (10, 19, 3). He who knows their ways of grazing, their home-coming and resting, I ask for that cow-herd (10, 19, 4) —*Cyavana Bhargava*. For identification of animals cattle's ears were marked by red-hot knives (*sadhiti*: Av. 6, 141). "Indeed one who has fields of barley, reaps it when it is ripe and brings it home together for food of men. Who cares for the

hay? He who comes riding on a horse (single horse without chariot) to a festival is not honoured. He who has herds of kine and horses finds Indra (*Maghani*) as his friend (X, 131, 2) — *Sukriti Kakshivata*.

Dhanya (Lith. *duna* = bread) may be wheat, another name of *vrihi*. "For our children and progeny vouchsafe us what we implore, the seeds of wheat, the blessing that sustains all life (5, 53, 13)" — *Syavasva Atreya*. "I am bringing cow's milk; have brought beer (*dhanya rasam*); brought are our heroes, our wives to this home (*astaka*: Av. 2, 26, 5). A wild species of wheat (*Triticum argilopoids*) is found in the hilly districts of Southwestern Europe and Asia Minor from which the Eincorn (*T. monococcum*) varieties of cultivated plants have been derived, the spriklets of which generally contain only a single grain. It is chiefly cultivated in South-eastern Europe, Asia Minor and Morocco. The brittle-eared *T. dicoccoides* in the mountainous region of Syria from which the Emmer group (*T. dicoccum*) with spikelets containing two grains having narrow and pointed ends, has been derived. *T. dicoccum* has been found in Egyptian predynastic and early dynastic tombs of 3500 B. C. and at Mohenjo-daro (3000 B. C.), excavations in lake dwellings of Switzerland and Italy of stone age and China of 2700 B.C. It was exclusively cultivated in ancient Egypt and neolithic peoples of Central Europe. At present it is now grown in Caucasus, Iran, India, Abyssinia, Morocco and Spanish Basque for human food. Bread-wheat with its numerous sub-races seems to have arisen by the hybridization and crossing of these two varieties. **Godhuma** and *vrihi* are mentioned (Av. 12, 42; Ts. 7, 2, 19; Vs. 18, 22); **Dhanya** (6, 13, 4). Whose (Earth's) foods are *vrihi* (wheat) and *yava* (barley); and there are five races; whose spouse is *Parjanya* (rain); salutation to fattening (*medhasa*) rain (Av. 12, 1, 42). Wheat and barley are life sustaining (Av. 11, 4, 13)." "Wheat and barley are the divine plants on the earth (Av. 8, 7, 22)." Wheat, barley, *Masha* (*Phaseolus radiatus*), *Tila* are the food (Av. 6, 140, 2). **Mudga** (*Phaseolus Mungo*), **Khalva** (*Phaseolus trilobus* Av. 5, 23, 8), **Priyangu** (millet = *Panicum italicum* = *Sylaria italica*; Ts. 2, 2, 11) are mentioned (Vs. 18, 12), with *Anu*

(millet = *Panicum scrobicalatum* : Av. 19, 50, 4), *Nivara* (*Sorghum vulgare* : Hind Javar), *Godhuma* (wheat) and *Musura* (lentil = *Ervum lens*)"—Vs. 18, 12.

Ripe wild fruits were appreciated. "As recent priests (*Rishi*) loudly chant, as for a ripe fruited tree (*Vriksha pakva*), a sickle in the harvest time, as a man eagerly longs for his wife, so I call for Indra who is invoked by many (4, 20, 5)"—*Namadeva*. Give us wealth for our enjoyment which some other ones claim. Shake Indra, as with hooks (*ankiva*) the tree with ripened fruits (*Vriksham pavkam phalam*) and wealth for us (18, 45, 3)"—*Visvamitra*. Are the branches with ripe fruits that can be shaken with hooks for their fruits belong to the apple species (*Pyrus melus*), a native of Western Asia or *Prunus armenica* (apricot), a native of the Caucasus region? **Tryambakam** we honour—who has a pleasant odor and is a nourisher. Like *urvarukam* (walnut—*Juglans regia*, a native of Western Asia, grown in Kashmir and in the Himalayas which when ripe easily falls off from the stems; or musk-melon (*Cucumis cantalupo*, a native of Baluchistan), free me from bondage, and from death; take me to immortality (7, 59, 12)—*Vasistha*. We honour **Aryaman**, a friendly husband-finder. Like *urbaruka* I release you from homes (parental control), but not from husbands (Av. 14, 1, 17). *Badara* (*Zizyphus Jujuba*) fruit is reddish (Vs. 19, 22, 20, 2) It is a native of Cochin-China, but is cultivated throughout India for its fruits which are eaten with relish, especially when they are ripe. They are acid and astringent. *Jujuba sirup* is pectoral. *Z. glabra* grows wild all over India. *Skt. bhumi* = Av. *Za*, Pers. *Zami*, Lith. *Zeme*, Gk. *Kthon*, Lat. *humus* = land.

6.—METALS

Gold (*hiranya*) was regarded as a valuable metal, usually for ornamental purposes. "Bring us (O Indra) of cattle, horses and a *mana* of *Hiranya*—gold (8, 67 (78), 2)"—*Kurusute Kanva*. *Hiranya*—Avestan *Zaranya*—Lat. *aurum*, Arm. *Zarik* (leaf

gold). Mana=Lat. *mina*; Gk. *mna*; Heb. mahesh; Assyrian *mina*. It was a Mycenaean weight of 470 grams (about 16 ounces). They were known in Greece as Pelasgos, in Italy as Etruscans and Itar; in Syria as Pulastu, Dans; Egyptian Danauna; and in India as Dānavas, Mleccha, Pulastas, Bhṛigus. Ugarit (Ras Sarma of Northern Syria) was destroyed by an earthquake about the middle of 14th century B. C. which is proved not only by archeological indications, but also by the reports of the king of Tyre to Amenophis IV, found out at Tel el Amarna. The city was still dominated by Mycenaeans. A whole set of bronze weights from quarter of a *shekel* (2, 5 grams to a *mina* (470 grammes=16 oz). *Mina* was in the shape of a couchant bull without any humps, as a masterpiece of animal sculpture. Another weight is a head of a Mycenaean with prominent nose and broad face (Caspian type). A silver pendant of 3 priests one of whom has a bull-head mask, recalling certain rock-carvings in Anatolia. A fine ceremonial axe in silver plated bronze with a lioness head on the socket, some bronze daggers, boring tools, a hole, a double hook for leading animals to sacrifice—(I.L. N. Feb. 20, 1937). Gold mines (hiranya vartini: 8, 26, 18; 6, 61, 17), nugget-gold (*hiranya stupa*: 10, 149, 7). "Ten horses, ten chests, ten garments and dinners (platters with food) and ten nuggets of gold (*hiranya pinda*) I have received from Divodāsa (6, 47, 23).—Garga Bharadvaja. Gold-earrings (*hiranya Karna*: 8, 61 (72), 12) and ear-drops (*Karna sovana*: 8, 67 (78), 4). *Niska-sobhana* (5, 19, 3) is necklace, *Niska* also meant necklace (1, 126, 2; 2, 33, 10; 8, 47, 15). *Hiranya-sruj* is gold-chain (Av. 10, 6, 4). *Rukma* was worn in *Vaksha*—breast (1, 64, 4). It was a kind of amulet suspended on the breast from neck like modern locket or defensive armour. At Mohenjodaro of about 2700 B. C. a hoard of jewells has been found in a silver vase wrapped in a piece of cotton cloth, containing necklaces of gold and jadeite beads, earrings, finger-rings, bracelets, amulets, and beads of silver, copper, cornelian and many precious stones. In a bronze slender figure of a nude danseuse of Mediterranean type, behind a heavy coil of hair on her shoulder, there are two necklaces, in her right arm there is an arm band and a bracelet, and a large number of bracelets on her left arm. In a nude pottery figurine, possibly a mother

goddess, there is a curious fan-shaped head-dress with panniers on either side (like Philistines), kept in shape by a ribbon on the fore-head, heavy necklaces of beads, bracelets and a girdle of three bands tied by a metallic clasp round the waist.

At Mesopotamian Brak steatite and alabaster amulets and idols with neck and a pair of round eyes have been found of 3000 B. C. A copper pin with an ibex head of 2700 B. C. Thirteen *gold ear-rings*, one *gold finger ring* and two silver bangles of 2500 B. C. An altar of 2200 B. C. has been found with a *golden speaking tube* in the centre in a room behind to make oracular utterances—a device similar to one found at Corinth. A ritual vessel in the shape of a clay trough adorned with relief figures of scorpions (Scorpio) and snake (Draco). A bronze axe and a sacred fire-altar of 2000 B. C. (I. L. N. Jan. 15/1928). The tombs of Khephereu's (Khafra) daughters and sons of the Fourth Dynasty (2700-2680 B. C.) have been found near the second Pyramid built by Khepheren. The skeleton of the princess was found extended on its back with head to the north. With it were two necklaces, one composed of 3 *gold threads* and some steatite beads, and the other of *gold beads* with semi-circular *gold-clasps*; a gold fillet with gold ribbons; 4 gold bracelets; gold anklets; and a copper belt plaited with gold layer round the waist. There is a *head-rest* of translucent alabaster veined with yellow lines. A bald-headed limestone portrait head of Palae-Alpine type with upturned nose is of excellent workmanship. (I. L. N. April 11-1936).

Gold was perhaps the first metal used by man, especially for ornamental purposes. Gold nuggets and gold dusts are attractive in appearance by their glittering shines. These could be easily obtained from alluvial deposits without real mining. Gold ornaments of neolithic age have been found. And in later periods it is common. The earliest gold ornament has been found in Egypt, containing gold nuggets with specks of platinum, but below 17 carats. By about 2500 B. C. true mining was known in Egypt. Auriferous quartz veins were followed by shafts and the material crushed with stone hammers for washing. In an inscription of about 1800 B. C. at Abydoo, Amenempet II says: "I forced the Nubian chiefs to wash gold". The earliest known map in the world is a plan of gold mine of the 19th Egyptian

dynasty (1350-1205 B. C.), probably near Hammamat whence came the black basalt (usually a quartzite) used for statuary. Job (22. 24) mentions "the gold of Ophir among the stones of the brooks". The Biblical Ophir may be Yemen or the Arabian coast of the Persian Gulf. But some Indologists believe that Ophir may be Sopara (Supara-Surparika) from which part as well as from Bhargukaccha (Broach), ships used to sail to Baberu (Babylon) according to Baberu Jataka. Babylon in the Assyrian inscriptions was called *Babili*, the gate of God. Its Iranian name was *Babiru*. It may be Rigvedic (4, 19, 9) *Banri*, Avestan *Bauri*, *Bapillu* of Behistan inscription, and the Babylonian may be *Pipru* (1, 51, 5), the enemy of Indra. Western India was settled by Abhiras (Avars—a Caspian Saka people) for which it was known as Abhiria according to Ptolemy. In Baberu Jataka (339) it is mentioned that peacocks were exported to Babylon. Maritime intercourse is also proved that in the ruins of Ur (Mugheir) not only cuneiform inscription mentions *sindhu*, *vegetable cloth*, *Heb. sadin* (Issiah 3, 23), *Gk. sindon*, *Ar. Satin*; it must have directly come through the sea to Balylonia and Syria, as otherwise through overland route sibilant *s* would have been converted into *h*. At Mohenjodaro cotton-cloth has been found as a wrapper of a silver vase. Sanskrit name of Cotton is Karpasa=Gk. Karpasos (linen), Lat. Carbasus (linen dress), Heb. *Karpas*. But about 1000 B. C. (Kings was not composed before fifth Century B. C.) Solomon imported from Ophir 420 talents (a Babylonian weight equal to 50 minas. Gk. talanton, Lat. talentum, Sans. tula=balance; compare Lat. tollo, Gk. telos= support. A talent is worth of about Rs. 5000, 2000) of gold (1. Kings, 28), *almug* tree (1. King 10-11, II Chr. 2, 8, 9, 10); Hebrew word is translated as *sandal* wood. Red sandal wood (*Pterocarpus santalinus*) grows in south Indian plateaus. It contains santalin, a red crystalline resinoid matter. Red sandalwood paste is used as a cooling ointment on the forehead in Hindu religious ceremonies and in headache. But it has not the fragrance of *Santalum album* (sandal wood tree) which grows in Mysore and whose yellowish brown heart wood after it has attained maturity is aromatic and yields by distillation the sweet smelling pale yellow volatile oil which is used in perfumeries), Ivory (*shenh-abbim*: 1 Kings 10, 22: Skt. *ibha* is

ivory, which was called in ancient Egypt as *ebu*, Heb. *abbin* ; Lat. *ebur* ; Gk. *elephas* ; Eng. ivory). ape (Kof : 1 Kings 10, 22 ; 11 Chron 9.21, Egypt. *Kafu* Skt. Kapi which has become in Gk. *kepos*, monkey *Cebus*, belonging to the genus *Cebinae* has been named) and peacocks (*tukkiyim* : Chron 9. 21 ; Job 39, 13 : peacock (*Pavo Cristatus*) is a native of India and Ceylon. Its most famous ornament is the long tail coverts ; the feathers of the train bear the *peacock eyes* at their distal ends. The crest on the head and the colour of the neck and breast are of also great beauty. The display of the male consists in the spreading of the train, accompanied at intervals by a shivering or rattling of the quills. The bird was also formerly esteemed for the table, but usually for its very pretty spreading plumages. The Tamil and Malayalan name of the peacock is *tokei* from which the Heb. *tuki* has been derived). It seems therefore that Ophir from which Solomon imported gold, ivory, sandalwood, apes and peacocks was a South Indian port. And there was *Uvari*, meaning *sea-port*, now a small fishing village to the south of Tuticorin, but in ancient days an important port near Korkai, the capital and for long the emporium of South India trade of the Pandian Dynasty till ninth century B. C. when Madura was built.

Ayas (1,88, 5) may mean any metal. It is possibly equivalent to German *erz* (derived from Goth. *ais*) which means both *ore* (mineralized stone) and *bronze*. But *eisen*, meaning iron, is also derived from High German *isen*, and Gothic *eisern*, and thence iron. Latin *Aes* means both bronze and copper. **Ayas** is Avestan *ayant*. The Homeric expression *ios kalkeres* means either iron or ore-produced spear. Iron-pillars (*ayah-sthūna*) decorated with gold (5, 62, 7) is found. Wild boars have the tusks of *ayas* (iron or copper : 1, 88, 5). Arrows are tipped with *ayas* (6, 75, 15). **Ayas** and *Kalayas* (black *ayas*) are both synonymous (Amar. 2, 266) with *lauha*—reddish copper ; later *iron*). *Syāma ayas* (black metal) is iron, *lohita ayas* (reddish metal) is copper and *trapu* is tin (Av. 11, 3, 7-8) ; Vs. 18, 13). Tin has been found at Mohenjo-daro which was used for making bronze. A bronze danseuse has been found at Mohenjo-daro, and a bronze vessel and an axé at Chanhu-daro.

Chanhu-daro was threatened by the Indus as Harappa. Both the civilizations belonged to the same age about 2500 B. C. The

Indus threatened to wash away the houses of Chanhudaro altogether. The Indus actually cut through the town dividing it into 3 parts, represented now by three mounds. The drainage system was excellent, surprisingly modern. At the junction of 4 drains there were outfalls. The drain pipes were of porous pottery with spigots for fitting into each other. Agate and cornelian beads have been found in large numbers in all stages of their development. They were bored by drills, made of blackish cherts, in appearance resembling the graphite of lead pencils. Their holes were so tiny that they could only be threaded on a hair. Many children's toys were found. Pottery animals like elephants, ibexes, toy rams on wheels, carts drawn by oxen, female figures—possibly mother goddesses, rattlers and whistles. There was a pottery animal with moveable head. There was a bronze Toy Cart with solid wheels and the driver seated in the front. A large number of seal amulets, mostly in square forms, engraved with figures of one-horned urus-ox, the bison, the elephants and the tiger. A very spirited bull without any hump on its shoulder is trampling a man under its feet. A large number of Kohl jars, containing paint, possibly used for painting eye-lids. Copper dishes and copper knives with curved tips are among the finds. Copper hair pin with coiled head, a type familiar in Sumer, Caucasus and Central Europe. Another copper hair pin of a type, hitherto unknown in India, but well-known in Anau, the Cyclades and Italy. A copper razor of horseshoe type with edges at both ends. A copper razor of double axe type with an edge at both sides and a handle for holding it. A bronze spear-head with holes for the attachment of a shaft and a wooden midrib. A small bronze cosmetic jar, containing Kohl. A bronze shovel of modern type, probably used for shovelling grain. A lip-stick of red ochre. Children's feeding pottery cups. A child's feeding cup made from a conch-shell. There is a pottery head rest of Egyptian design. An ivory comb with incised decoration of concentric circles on each side. A pottery ink-pot with rib-like ornaments drawn on each of the four angles (Mackay in I. L. N. Nov. 21, 1936).

Mari was destroyed by Amorite Hammurabi (Kshamarabi) in the 32nd year of his reign (2000 B. C.) by overthrowing its king Zimri-lim. A horned (2 cow's horns) goddess,

with quadrangular face of Caspian type, wearing a lead necklace and flounced skirt in a standing posture is pouring water or milk from a vase in hands (Aquarius). In the royal kitchen various moulds with circular loops and animal designs of stags for *moulding cheese* have been found. Another image of *Ishtar* with the head-dress of 4 horns, locks of hair behind it, flounced skirt and beautiful face of Alpine type has been formed. Below the ground, of about 3000 B. C. level, a nude *Ishtar*, wearing a turban and head necklace, with well developed breasts and hips, has been found on the foundation *nails of copper* and bones of sacrificed animals (I. L. N. Oct. 31—1936). At North Sakara a tomb of a nobleman of early Egyptian Second Dynasty (about 3100 B. C.) has been unearthed with a complete meal laid out for the service of the dead man with numerous flint knives and scrapers, *Copper Vessels*, including a ewar and a basin, copper knives and small chisels (I. L. N. Jan. 14—1939). At Megiddo in Syria about 3500 B. C. people used to live in rock-cut dwellings. And a well-wrought *bronze sword* of 3000 B. C. has been found (I. L. N. Nov. 19—1938). At Khafage of about 3500 B. C. a Sumerian temple has been unearthed with many statues of Palae-Alpine type. A pair of wrestlers with a free catch-as-can type with large vessels on their heads in *copper* (I. L. N. Dec. 10—1938). And in the shrine a stone head with bearded face of Alpine type, a *copper* bull statuette with beard, a bearded human-faced winged bull, have been found (I. L. N. Dec. 17—1938).

Copper was in use among the Sumerians as early as 3500 B. C. and was common in 3000 B. C. Sumerian copper of 3000 B. C. contains nickel and arsenic which are found in the copper ores of Azerbaijan, Armenia and Anatolia. In the south of Caucasus, there was an important copper-smelting centre long before this time. A copper deposit with early working has been discovered at Jabal al Madan, possibly the same as the *mountain of Magan*, mentioned in Sumerian tablets of 2700 B. C. and the copper found at Ur and Kish is shown by chemical analysis to be identical with the ores of Madan. In predynastic period of Egypt, the pupils, edges of the eye-lid and eye-brows used to be painted with green malachite (basic carbonate of copper) paste. Possibly a fragment of malachite or cosmetic paste prepared

from it fell accidentally into a charcoal fire, and the resultant copper was made by the Mediterraneans into a very useful weapon of offence. Green **Osiris** is **malachite**. His son **Red Horus** is the reddish copper. Hathor represented as the star-spangled sky in the form of a cow was the goddess of the malachite mines of Mefkat (Malachite city) in Egypt and in Sinai. Horus was worshipped by these Medinterraneans as Mesniu, the copper-smith. Horus of Behutet was the *lord of the forge city*—Edifu. Though in the First Dynasty copper was used, it became more common in the Second Dynasty. Sinai was the main source of supply of copper to the Egyptians though many mines in Egypt were worked. The copper ores of Cyprus were worked by the Phoenicians and were supplying Egypt during the Eighteenth Dynasty which began in 1587 B. C. In Europe copper mines of the bronze age were working in South Russia, Greece, Germany, France, England, Ireland, Spain, Portugal, especially in Tirol where the mines of Mitterberg were worked from about 1600 B. C. continuously with the Hallstatt period of Iron Age about 800 B.C. At Mohenjodaro numerous copper tools, weapons, jars, dishes and even a barbed fish-hook containing nickel have been found. Tin mines were worked in Altai Ranges with bronze tools which have been found there, possibly by the Chudes (Sadras) whose antiquities abound in the region. At Megiddo a bronze sword of 3000 B. C. has been found (I. L. N. Nov.—1938). A metal bowl from the tomb containing 8.5 p.c. tin. The Phoenicians used to get tin in the Taurus range. But the supply being inadequate, they used to get it in the Caucasus, sending their ships through the Bosphorus and the Black Sea. They used to get tin from Spain from 1900 B.C. and got tin of Britany and Cornwall as early as 1500 B. C. For trading purposes, particularly for the supply of tin, they founded Gades (Cadiz) in Tartess (South Spain) about 1100 B.C. They founded Malta (Melita), Marseilles, settled in Sicily, Crete, Sardinia, Corsica, and Channel islands which were called Cassiterides (Tin Islands) in Greece. The tin mines of Bohemia and Saxony in the Valley of Elbe were also worked from early times. The Cassiterite (Gk. Kassiteros = Skt. Kastira) occurs mostly near the junction of the granite and slates on either side of Erzgebirge in much the same way as in Cornwall.

Silver (*Rajata*) is seldom mentioned in Rigveda. But *rajata*, meaning white is found only once. "A reddish brown and a white (*rajata*) steed we received from *Ukyhanya* (Uxii, Northwest of the Persia Gulf above Susa) and *Haryana* (Hyrcania, south of the Caspian Sea), and one harnessed chariot from *Sushaman* (Susiana) 8, 25, 22;— *Visvamanas Vaijasva*. However in 10, 105, 7 wonderful (*adbhuta*) like *rajas* (silver) is found. In Atharvaveda in one place (5, 28, 1), by *rajata* silver is indicated, but not in (13, 4, 51) where it simply means *bright* with an amulet of three metals "nine lives are added in order to prolong life for a hundred autumns. In the gold (*harita*) 3 (lives), in silver (*rajata*) 3, and in iron (*ayas*) three (lives), infused by magic (Av. 5, 28, 1). Silver is called *white gold* (*rajatam hiranyam*: Ts. 1, 5, 1). Silver beads and a vase have been found at Mohenjodaro. Silver ornaments have also been found at Harappa. *Rajata* (silver)—Avestan *erezata*; Gk. *arguros*; Latin *argentum*; Celtic *argat*; Toch. *arkyant*; Arm. *arcat*; Fr. *argent* √ *arg*=to shine. Skt. *ark-a*=sun-shine; Gk. *elec-tron*=shining metal, amber. At Susa silver is mentioned on a tablet of about 3500 B.C. In Egypt in early times it was known as *white gold* and was regarded more valuable than gold. But in the 18th Dynasty it became common and of much reduced value. Khattis worked the silver mines of Asia Minor and it was a very common metal with them. The galena (lead ore) of Karahissar yields as much as 800 oz. per ton, and it was dilligently worked by the Khattis and was their main source of supply. In Abraham's time (about 2200 B. C.) commerce was carried on with silver (Heb. *Keseph*) by weight (Gen. 23, 15). In the age of Solomon (1000 B. C.) depicted in the Chronicles written about second century A.D.) it was abundant and used in the tabernacle (*Ex.* 26, 19), possibly due to its ample production. It was coined by Maccabees (175, 164 B. C.). In a temple dedicated to Mont, god of war, by Ametephet 11 the third Pharaoh of the 12th dynasty when he was raised by his father Senuseret 1 (1960 B. C.), a silver lion in a crouching position with some silver vases, cups, rings chains, and lapis lazuli necklace and amulets in 4 bronze chests have been found (I. L. N. 18, 1936). **Sisa** (lead) is not found in Rigveda. But in Atharvaveda (12, 2, 1; 19, 20, 53) it is used as

an amulet. It might have been used as an instrument of offence against enemies in the shape of molten lead. "*Sisa* (lead) is blessed by Varuna. Fire (Agni) beautifies lead. Indra has given us the lead to overpower the enemies. With this we can conquer all the tribes of the brunets (*Pisācas* : Av. 1, 15, 2). It is also used as balance-weight in shuttles (Vs. 19, 80).

Lead has been found at Mohenjo-daro and Harappa. The palace of Naram Sin of Agad, grandson of Sargon (Caspian) he built in 2700 B. C. at Brak has been found with copper eagle, copper razor, copper saw, 4 copper tools, a cow in alabaster, couchant raris in stone, a couchant lion, a squatting monkey (I. L. N. Oct. 15—1938). A *lead amulet* in the shape of a bearded bull, gold filigree pendants; gold, silver, agate and cornelian beads, coiled *silver* earrings, silver beads with spiral ends (like those of Troy 7), a clay vase decorated with snakes (Draco) and scorpions (Scorpio : I L. N. Oct, 22—19.8). At Rhas Sharma of 1500 B. C. in a Mitannian stable, bronze implements, engraved copper sheets, a tempered iron battle axe with bronze socket, a fine lead grill for drainage into a sewer have been found (I. L. N. Jan. 6, 1940) Lead is accompanied by silver, zinc and iron. At the outcrop of the upper contact the galena, blende and pyrites give place to cerussite, calamine and haematite. The red colour due to haematite makes the outcrop conspicuous. And it is looked for iron, then silver and finally for lead. The Khattis worked the galena mines in Asia Minor, principally for silver, but got lead as a byproduct. The galena mines of Laurium (in South Attica) were at first worked by the Mycenaeans. Then the Ionians began to work it about 600 B.C. A galena casting of 100 kilograms contain about 19 grammes of silver. The Athenian coins often referred to as *Laurium owls* (they had a head of Athena on the obverse and an owl on the reverse) contained 98.5, p. c. of silver. And Athenians became so expert smelters that not more than 10 p. c. of the silver remained in litharge, and which made Athens very rich. The Greek word for lead oxide is *Aithargeros* which means *silver-stone*.

Sanskrit **Loha** (iron) — Latin *raudus*; Old Slavic *ruda*; Old Nordic *raudi*; Old Ger. *raude* (crust of the wound); Arm. *aror*. At Harappa of about 2500 B. C. some lumps of loellingite, a

native *arsenide of iron*, closely related to arseno-pyrite, have been found in a large copper jar, covered with an inverted dish with weapons and implements of copper—2 *double axes* (Mycenaean—Khatti), 1 arrowhead, 1 saw, 1 mace head, 21 celts, 2 lance heads, 16 spear heads, 7 daggers, 2 choppers, 13 chisels, stylus and the beam of a weighing scale. On one of the seals are depicted seven men of definite brachycephalic type with prominent nose and fleshy lips (Khattis=Kelts=mixed Alpines) wearing kilts and helmets marching in procession. Among the finery jars excavated at Harappa, the most interesting is a group of more than a hundred jars which were covered with inverted bowls, flasks, handled lids and potsherds. These jars are decorated with chevrons, wavy lines, and representations of deer, goats, birds, peacocks and human figures. One of the jars is decorated with three flying peacocks, alternating with stars and a human figure is horizontally on the body of each peacock. It seems that these brachycephals became known as Khatti (now called Khatri) horde—**Kshatriya Purus**. At Ur a specimen of iron-ore has been found in a stratum of 3000 B.C. containing 10.9 p. c. iron. The Great Pyramid built by Alpine Khufu of the Fourth Dynasty about 2840 B. C. contains a piece of iron without nickel, therefore unlikely of meteoric origin. But about 2000 B. C. there are indications there was iron-smelting in Caucasus regions. At Rhas Sharma an ancient tomb has been found with funerary vases filled with ashes, bronze implements and two bronze cups (1500 B. C.) mentioned in a citizens will written in cuneiform on copper (I. L. N. Dec. 30-1939). Contiguous to a great hall, there is a royal stable for horses with stone mangers along the wall and a trough fixed in the pavement to water the royal horses during exercise. A bronze horse bit which would fit a small-sized horse or pony; a Mitannian *battle-axe* having a bronze socket with molded ornaments representing wild boar and lion heads encrusted with gold wire representing the skins of those animals: from the gaping mouths of the two lions projects the blade of the axe which on analysis has shown to be composed of *iron* which has been *tempered* and *hardened*, thus revealing the process of *steel-making*. The socket has been shrunk to the base of the blade, gripping it firmly, and so rendering unnecessary the use of rivets. A stone drainage

system ran under the floors of the rooms and through the walls of building in the palace, designed to carry away water used in the bath rooms to the main sewer which was covered with flat stones. And there is a fine *lead grill* for drainage. There is a copper statuette of god of mesocephalic head, clad in a close-fitting mantle, trimmed with fur, the eyes being composed of white stone and gold. The arms which were fixed by rivets are missing. The consort of the god—a copper statuette—was formerly plated with gold, representing a seated goddess, wearing a turban, and clothed in a long robe, exposing the full round breasts, the fur-trimming being elegantly draped over naked shoulders. There is also a Hysko bronze dagger of 18th century B.C. with handle formerly decorated with inlay (I. L. N. Jan. 6—1940). The Mitanni (Mitra+anika=allied army; Rigvedic Mitajnu: 3, 59, 3; 6, 32, 3; 7, 95, 4) knew well how to train horses and train them to use them in battle with the war chariots. On the Euphrates they formed the earliest horse-breeding aristocracy and thus made Mitanni a dangerously military state which dominated the Euphrates plains and Syria in 1600 B. C. For when a squadron of Mitanni chariots came thundering across the plain, the Babylonian and Syrian infantries were scattered like autumn leaves. Perhaps the Mitannis reached Euphrates region through the Caucasus, as in Mitanni Chariot found in Egypt (now in Florence Museum), there are birch fibres which are only found in the Caucasus. The Khattis manufactured iron daggers, double axes, spearheads in the 1500 B. C. out of the iron mines of Cappadocia. But it was a slow process. For when Rameses II of Egypt in 1280 B. C. asked his father-in-law and ally the Khatti ruler Khattusel II for some *iron daggers*, Khattusel could send only one, promising however to send more when they were made. In Genesis the perrizites—the iron workers—are originally associated with the Hittites (Khatti). Perrizites were an ancient Canaanite tribe. Canaanites (Cimmerians=Skt. Kinnara) are mentioned by the side of Hittites; Amorites and Perezites (*Exod* 3, 8; *Daut.* 7, 1). In the Table of Nations (*Gen.* 10, 6) Canaan is not included among the Semites, but is a son of Ham (*Gen.* 9, 18). In Amarna times there are Indo-Aryan names among the rulers of Canaan. Palestine about 1600 B. C. was ruled by Mitanni and Harri

(Arya). In the Khatti cuneiform texts from Boghaskeui, Canaan (Kinahhe, the same form in Amarna texts) is mentioned in a record concerning Mitanni and several non-Semitic North Syrian kingdoms (Kinza, Danip, Ugarit, Katva). Other centres of early iron-smelting were in Kurdistan, Chalybes, near the head of the Euphrates, whence comes the geologic Greek name Chalybite or siderite for ferrous carbonate; and around the south-eastern shore of the Black Sea. Valem in Western Hungary has been an early iron-mining and smelting centre between 1100-800 B. C. of Hallstate period. In the La Tene period iron was made on the north-west of Lake Neuchatel and in Jura. In Jutland lumps of iron scoriae and a blumery have been found under an Iron Age tumuli. The ore was superficial limonite pan. In Italy iron appeared at the close of the 12th century B.C. The ores of Tuscany and later of Elba attracted first the Villanovans and then the Etruscans (700-264 B.C.). The Achaeans overran Greece in 15th century B. C. riding on swift horses and armed with piercing iron spears.

Gold found in Mohenjodaro and Harappa is associated with silver, known as *electron*, common in Egypt. Though electron is found in Kollar Gold Fields and Anantapur mines, it was not known in old days. In third and second millenium B.C. gold mining was not known; gold washing from auriferous river beds was only prevalent. Though Hutti mines of Deccan show working from early days, it does not antedate pre-Christian era, and it is not mixed with silver. Though gold is found in sand-washings of Dharawar streams, it is not electron, and is not known in ancient days. But Egypt was famous for producing gold and electron. Tell-el Amarna letters show that Khattis of Syria and Kassites of Babylonia often requested presents of gold, and what they got was adulterated with copper. Other ancient centers of gold production were Central Asian and Siberian rivers, Western and Middle Khen Lun Mts. Though Herodotus mentions that the Sindhu Satrapy used to contribute to the treasury of Darius 180 talents of gold, it was based on idle rumors, and had no basis of fact. Ancient Sindhu and Punjab used to import gold and silver. Though silver is found in Kulu valleys, Rewa, Monghyr and in Manbhum, they are of poor quality and of recent development and is not associated

with lead as found in Mohenjodaro, Iran, Ghosbad valley of Afghanistan, Armenia, Anatolia are rich in silver-bearing lead mines. Lead with copper is found in Ajmere; copper ores associated with lead 1. 58, 3. 28 p. c. Heaps of copper slags of ancient working have been found at Shaha Bellid and Rohat in Baluchistan; Shaha Mukshad Range in Afghanistan and Anarek in Iran. But they do not show nickel. The Mohenjodaro and Sumerian copper show almost identical quantity of nickel (1 p. c.), lead (0. 30) and sulphur (2 p. c.). Though Tin (cassiterite) exists in Bombay Presidency and Hazaribag District, Tin was not worked, and for making bronze it was perhaps imported from Astrabad and Kara Dag in Iran. Though green Microcrine Felspar exists in Dodhabatta in Nilgiris, it has been worked from prehistoric times in Gebel Migit in the eastern desert of Egypt where it became very fashionable during 12th Dynasty. Though Amethyst exists in Deccan, it was the favourite of the ancient Egyptians as steatite. Turquoise though found in Nishapur and Kharsam in Iran, it was also very popular with the Egyptians. Lapis Lazuli is found only in Badakshan (N. Afghanistan) and in Demavend Mts. Jadeite is only found in Pamirs, Turkestan or Tibet. Bitumen for bonding bricks and for waterproofing bath basins is found in Isakul of the Indus, Sinni in Baluchistan, and particularly in Hit on the Euphrates. Loellingite, an arsenide of iron, is found in the Punjab, Kashmir, Afghanistan, Iran and Asia Minor. *Silajit* as an aphrodisiac and for hepatic complaints is an exudate from the Himalayas. Meteorite stone as phallic symbols are known in Greece, Syria, *Kabba* of Mecca. But naturalistic-Linga and Yoni symbols found in abundance are from the yellow Jaisalmir stone. However figurines of Mother Goddesses, head and body ending in a flat base are strikingly similar to those of Minoan and Mycenaean origin.

7.—THE COUNTRY

"Whose (*Ka's*) glories are the snow-covered mountains (*himavanto*), the ocean (*samudra*) with the *Rasā* (rivers). These regions are his (*Ka's*) arms (X, 121, 4)".—*Hiranyagarbha Prajapatya*. *Hima* is snow and cold. *Rasā* (1, 112, 12) is the great Mother *Rasā* (*Mata Mahi Rasa* : 5, 41, 15). The Greeks called the Volga as *Rhos*, *Rha* or *Oarus*. It is still the *Mother Volga* of the Slavs. *Rhesus* was a river god in Bithynia in N. W. Asia Minor. *Rhea* is the *Great Mother*, and *Mother of the gods* of the Mycenaeans. It is the Avestan *Ranha*. Herodotus identifies *Ranha* with *Aras*. But the Iranian people lived on the shores of *Ranha* which indicates it is *Iaxartes* (Sir Daria). *Ka* is only once mentioned in the *Rigveda* (X. 121). And in later myths, it is an unimportant deity, and appears to be a strange foreign import. But among the ancient Egyptians, it was a dominant god—the body's immaterial double that hovered over the dead bodies in their funeral chambers. From the *body's immaterial double* (*Ka*), the conception of the *immortality of soul* has developed. *Mujavant* is the mountain where the best *Soma* plant grows (10, 34, 1). *Mujavant* is the abode of *Rudra*. "This is your travelling fare, O *Rudra*; with it go to your place—*Mujavatah* (Vs. 3, 61). *Soma* plant has been identified with *Cannabis sativa*. And *Rudra* votaries are addicted to its intoxicating preparations. And *Cannabis sativa* is indigenous in Central Asia. "I send away *Takman* (Malarial Fever) with salutation. Let it go to *Sakambha* (a Saka tribe), the dung user (Central Asia being arid the Saka tribes and Tartars used to burn cattle dried dung and bones as fuel due to scarcity of faggot), and *Mahāvrihas* (the name of a Saka tribe who used to have bull as their deity as *Danaus*—*Dānavas*). Its *Takman's* home is the *Mujavants*; its home is among the *Mahahrishas*. Since thy birth, O *Takman*, thou art at home among the *Balvikas* (Balkh peoples : Av. 5, 22, 4-5). *Takman*, go to the *Mujavants*, among the *Balvikas*. Further off, seek the wanton *Sudra* (Chudes who dwelt in Central Asia and Altai Mounts) woman. O Fever, shake (malarial paroxysm) her up a bit (Av.

5, 22, 7). *Mujvan* and *Sumahan* (Thian Shan) are covered with snow. They are the abodes of Girisa. At their foot hills there is a lake Sailodā (Issakkul); Sarisu (Chu) originating flows between Vaksu (Ita) and Sitā (Syr Daria: *Matsya* P. Ch. 120, 19-20). Mujavant therefore seems likely to be Mujun-kum between Syr Daria and Chu rivers. **Navaprabhamsana** where grows the all-healing *Costus* (Av. 19, 39, 8) is Naubandhana of later myths (*Sat-Br.* 1, 8, 1, 6) where Manu's boat of flood myth was tied. The flood myths of nations have been borrowed from the eleventh tablet of Babylonian Gilgamesh Epic where the Mountain Nizir (Mt. Ararat) held fast the ship and did not let it go. Noa's ark and Yima's *vera* also rested at Mount Ararat (*Gen.* 8, 4: *Vendedd Far II*). So it is very hard to say by what mountain Naubandhana was meant. It is identified by Nanga Parvat in Kashmir. Rigvedic Nāva (Argo Navis; 6, 58, 3) = Skt. *nav*; Lat. *navis*; Gk. *naus*; Lith. *nav*; Pru. *nav*; O.-Fr. *nave*; Eng. *navy*; Teut. *nawe*; Ger. *naue*; "Ye, Asvins brought Bhujya home in a hundred oared (*satas-aritra*) ship (nāva: 1. 116, 5)".—*Kakshivat Dairghatamasa*. Aritra = Gk. *eretion* (eressein, eretes = oarsman); Lith. *irklas*; Lat. *remus*; As. or; Eng. *oar*; Ger. *ruder*; Nord. *roa*.

Gandhara (1, 126, 7) might have been the Hapta Hindu (Sapta Sindhu), the Indus basin of excessive heat (in the summer), producing abnormal issues in women (leucorrhea or gonorrhea), the present southern parts of Afghanistan and Baluchistan. It is the Gadara which Darius conquered and mentioned and inscribed in the fifth year of his reign 516 B. C., and Gedrosia of the Greeks. Kandahar might have been the capital of the province of the name. Hiuen Tsiang called it Kiantola, the Kundara Gandhridoe of Strabo. It might have been the Gandharva-desa of Rāmāyana (Uttara K. Ch. 113-114). **Sindhu** has seven affluents running in three courses (X. 75, 1; X 68, 8; 7, 36, 6)". When the beautiful river flows—the seven streambed mother (saptathi Sindhu Matā) with Sarasvati—they flow fine like well-milked jets (sudugdhāh sudhāre; filling a receptacle from the udder of the milking cow: or nourishing) swelling with the volume of their own water (7, 36, 6)"—The Sindhu (Indus), Satadru (Sutlej), Parusni (Ravi), Asikni (Chandra-bhāgā = Chenab), Vitastā (Jhelum), Kubhā (Kabul) and

Sushamā (Shuram—Gomal) constituted *Sapta Sindhu*. "Whether this bdellion (guggula) has come from *Saindhava* (Sindhu region) or overseas (samudriyam; Av. 19, 38, 2), it is equally good. Bdelium is a transparent, fragrant bitter resin, derived according to Kaempfer from *Borassus flabelliformis*. Arabian bdellium (bdallion arabikon) was very fragrant translucent and yellowish. Babylonian variety is mentioned by Pliny. Egyptian variety is mentioned by many. It was used by the ancients as a medicine, fragrant paste and for making incense. "What is the use of cattle among the *Kikatas*? They do not drink milk. Nor do they fry (food with butter) in the oven. Give us the possessions of miserly *Pramagandha*, the low-born (naicasākhām: 3, 53, 14)"—*Visvāmitra*. The Chinese, Malaya peoples, Burmese, Khasis, Garos, Dards, Mundas do not drink milk. *Kikatā* is identified with *Magadha* (*Vāyu* P. 105). A reddish-brown and a white steed we received from *Ukshnya* (*Uxiana*) and *Haryāna* (*Hyrcania* respectively), and a harnessed chariot from *Sushāman* (8, 25, 22)"—*Visvamanas Vaiyasvas*. *Uxiana*, inhabited by *Uxians*, is described in the cuneiform inscription as *Uwaja* (the aborigines), speaking an agglutinative dialect, possibly mixed *Palae-Alpines* and *Australoids* who inhabited the territory, *Khuzistan*. *Uxinians* were robbers who even harassed the army caravans of *Darius* and *Alexander*; the tribe is now known as *Huzha* (11, E. B. 1, 547 C; 1, 140). *Hyrcania*, an ancient northern province of *Iran*, south of the *Caspian Sea*, the *Avestan Virkana* (wolves land), as wolves were abundant in *Elburz Mountain* with its beautiful *Demavend* (*Kāsyapa*) peak. It is known now as *Mazandaran*. *Sushāman* is *Iranian Susiana* (*Shushan*). It is the *Kāssi* of the cuneiform inscription as it was long under the control of the *Kassites*. Its capital *Susa* was the spring capital of the *Achaemenides* and here their kings were crowned (11, E. B. 9, 140). In *Susa* under the foundation of the temple of *In—Susinak* (compare the *Sisunāg* dynasty of *Magadha*, ostensibly of foreign origin—possibly *Sces—Ses-nāga*=*Sisunāgas*) in the northwest part of the mound a vast quantity of bronze objects has been discovered, for the most part earlier than the tenth century B. C. Among the monuments in other parts of the mound are the obelisk of *Manistush* (conqueror of 32

kings of Babylonia—Alpine), the stele of Naram-Sin (grandson of Caspian Sargon of Agade 2530 B. C.) and the Code of Hammurabi and a large number of Kassite boundary stones (11 E. B. Susa). Susa (Elam) at the time of Vistaspa Darius (521—486 B. C.) was the centre of astronomical observations and calculations. For in Matsya P (ch. 124, 28, 31) we find that there is a beautiful city *Susa* is Varuna (identified with Susianus; Vendidad 1, 18). Alburz is the holy Mountain—Hara Berezaite. Its towering peak Demavend (Taera) is sacred, the abode of gods. The sun, moon and stars revolve above and round it. “Up”! Rise up and roll along, thou swift-horsed sun above Hara Beerezaite (Hara Pārvati) and produce light for the world (*Vendidad*: 21, 5, 18) “As you brought riches to Great Sushāman (Sushan) for Vyasvas, O mighty blessed lady (8, 24, 28)” —“O Agni, bring Varo Sushāman and to all its people riches, O ever-youthful hero (8, 23, 28)” —*Visvamanas vaiyasva*. “To Varo Sushāman, come with your help, O Nasatyas for a long stay, O strongest of the strong (8, 26, 2)” —*Visvamanas Vaiyasva*. “Indra killed the Varasikha (a Nāga tribe) adherents to aid Abhayavartin Chayamāna, (Parthian) at **Hariupiya** (Hariob, a tributary of Kurran) as he smote the vanguard of Vrichivans: Yadu descendants—Alpines), the rear fled frightend (6, 27, 5)—*Paya Bharadvaja*. “O Ye waters, your great glory the poet is proclaiming to all mankind. You seven rivers are marching towards the sea in three series. The **Sindhu** surpasses all rivers in its flow (1). Varuna has given thee movements to rush through the channels from the precipitous ridges to this fertile earth in moving floods as a great stream (2). The roars of thy currents are ascending from the earth into the sky. Thy rapids create a sound like a thunder-shower or the bellowings of a maddened bull (3). As cow gives milk to her calves, so thy tributaries, O Sindhu, bring thee water with splashing sound. As the king (rājan=Lat, rex; Gaelic, righ; English, roy, regent, Fr. roi; and Ger. reich) rushes in the war at the head of his army, so thou rushest at the van of thy swift tributaries (4). My salutations to Gangā, Yamunā, Sarasvati, Sutudri (Sutlej), Parushni (Ravi); hearken Ye O Asikni (Chenab), Marudvridhā (from the confluence of the Asikni and

Vitastā up to their affluence with the Sindhu), Vitastā (Jhellum), Arjikiyā (Gabir), Sushomā (Sohan : 5). First united with Tristamā (Luni), thou art coursing in the same channel with Susartu (Kohat), Rasā (Chitral) and with Sveta (Swat). Thou Sindhu with Kubhā (Kabul), Gomati (Gomal), Krumu (Kuran), Mahatnu (Suri) flow together (6). Flashing and gleaming she rushes gloriously through the realms. Sindhu, thou art mightier than every other stream, and swift, pretty and worth being like a spotted mare (7). On thy shore, Sindhu, there are good steeds, excellent chariots, fine dwellings (Su-vāsa) and well-executed gold ornaments. Covered with wool and sweet scented flowers, thou art always a youthful beauty (x, 75, 1-8)" — *Sindhukshiti Praiyamedha*.

Asikni and Sindhu shores have healing herbs (*bheshaja* : 8, 20, 25). Asikni (Acesines of Quintus Curtius) is the Chandra-bhagā, the modern Chenab. You have been placed in the centre of this earth in devotional glory by man on the **Drishadvati**, **Apaya** and **Sarasvati**. Agni shine there (3, 23, 4)" — *Devasrava Bharata*. Apayā is the Oghavati, a tributary of the Chitrang, 3 miles to the south of Thaneswar. On this river Kuru performed a sacrifice (MBh. Sailya, ch. 39). **Drishadvati** is the modern Chitrang which runs parallel to the Sarasvati. **Arjikiya** and **Sushoma** are the Gabir and Sohan (Soanas of Megasthanes) rivers. Krumu, Gomati (8, 25, 30) and Mahatnu (x. 75, 6) are the western tributaries of the Indus. Krumu, the Kunar of the Greeks, is the Kurram. **Gomati** is the Gomal : later the name was transferred to an affluent of the Ganges, flowing through Oudh—the Gumti. **Mahatnu** is possibly the Tachi river flowing through Bannu. Some however identify Mahatnu with the Argesan, an affluent of the Gomal. **Kubha** is the Kopphen and Kophes of the Greeks, the present Kabul river. "Let not Rasā, Anitabhā, Kubhā, Krumu or Sindhu hold you back. Let not Sarayu and Purishin (Purushni) obstruct your way. Bestow your blessings only (O Maruts) on us (5, 53, 9)—*Syavasya Atreya*. Is Anitabha Alingar river, a tributary of the Kabul river? "Bribu is the leading head of the Panis, above them all like the tall rushes on the **Ganga** (Ganges : 81). To a seeker after wealth like myself he has given away a thousand (cows) as a gift as quickly as the

wind blows (32). Let us therefore sing the glories of Brihhu's noble deed. He who gives thousand (cows) deserve thousand praises (6, 45, 31-33)"—*Samyu Barhaspatya*. **Parushni** (Ravi) is a mighty river (mahenadi—mahinadi : 8, 64 (74), 15). Woolen clothes (urnā vasatā) are woven on its shores (5, 52, 9). About 1400 B. C. ten confederate tribes trying to cross the Parushni to fight against Pāṇchala monarch Sudās sustained heavy losses. To divert its swelling waters, possibly they dug some channels. But the dikes collapsed. And some of the quickest were drowned (7, 17, 8-9). "The overflow of Sindhu (Indus), Vibali (Vihva, a tributary of W. Indus) and Vitastā (Jhelum) you control, O Inra, by your magic (4, 30, 12). **Rasa** (1, 112, 12) is Kunar-Chitral river, a tributary of the Kabul. Saramā crosses as a spy (Av. spaso = Skt. spāsas, Lat. specere, Ger. spahen) the Rasā to find out treasures of Panis (Phoenicians). Saramā is also the mother of celestial watch dogs (Canis Major and Canis Minor) of Yama (Perseus). Panis welcome her and ask her to stay with them. They declare that they will not surrender their cattle without fighting and they possess sharp pointed weapons (x. 108, 15). Rasā (9, 41, 6) is vague—an ancient memory. "Like an unbridled horse or like a calf that rushes to lick the udder of its mother, Vipās (Beas), thou art rushing from thy mountain abode for union with the Satadru (1). Impelled by Indra (monsoon) you are swift like a chariot, and your mingled currents swelling with your billows race for the union with the sea (2). I have come near the motherly stream. I have reached the Vipās, broad and pretty. Licking as it were their calf, mothers are flowing to their common home (yoni : 3). Vipās (Beas) and Satadru (Sutlej) :—We sweet swollen streams rush to our gods-ordained home. Who can arrest our movements? What does the poet expect from the Rivers (4)." Visvāmitra : Hearken to my words. Rest a while in your journey. Kusika (Kassite : Kāśya : Khas) descendant with hearts fervent longing solicits the favour from the stream (5). Vipās and Satadru : "The thunder-armed Indra, smiting Vritra (Hydra, representing monsoon) has dug the channels of the rivers. Strong fisted (su-pāni) Savitā our god, at his behest onwards we flow (6). Forget not this word of you, O poet. Let it be re-echoed through ages. Please

us O poet by orations (ukteshu). Lower us not before men. To thee be honour (8). Visvāmītra :—'Listen earnestly O sisters to the poet who has come to you from far with loaded wagon. Bow lowly down for us to traverse easily. Stay rivers with your floods below our axles (9). Let your waves bear up the pins, and ye O Waters, spare the thongs (Yoktrāni). And do not harm these sinless and faultless pair of bulls (13). The Rivers :—Yes we will listen to thy words, O poet. Thou hast come from far with a laden wagon. I yield to thee as a wanton maid (to her lover), as a bride to her married-man, to thee (10). When the Bhārata band, eager for fray, sped by Indra, has fared accross thee, then let your streams rapidly flow, this is the favour I crave from you who deserve our adoration (11). Inpestuous Bhāratas have fared over. The singer has won the favours of the Rivers. Now swell, and swell rapidly with your floods. Fill fully your channels and roll swiftly onward, "(3, 33, 1-13)".—*Visvāmītra*. Visvāmītra was the priest of the confederate forces of the ten-tribes against Panchala Sudās about 1400 B. C. As the confederate forces included the Purus, who were descendants of Bharata, son of Dasyanta and Sakuntalā who was a daughter of a Visvāmītra ancestor, the Pauravas were known as Bharatas; while crossing the Parusni, many of the confederate forces led by a Visvāmītra descendant were drowned. It is apparent that they succeeded in crossing Vipras and Satudru. "He who has only hope as his possession casts himself in the midst of foamy waters (gets drowned by jumping which throws water upwards). Bathing in milk Kuyava's (a native chief) two wives drowned themselves in the waters of Sīpha (is it Sīprā in Ujjain? 1, 104, 3)".—*Kutsa*. "Fifty (damsels (as slaves: Vadhū) has Purukutsa's son Trasadasyu (1875 B. C.) given me, a liberal noble, lord of the brave (36). And Syāva (Trasadasyu) brought for me a strong steed at Suvastu's (Swat, a branch of the Kabul river, Soastas of Arrian) gorge, and a herd of three times seventy kine, a liberal donor (8, 19, 36-37)".—*Sobhari Kanva*. Srota (1, 57, 11; 1, 95, 10=srota=stream. √ Sru=to flow, Gk. re-ein=to flow, rey-ma=flood, ry-thmos=rhythm (flow in music); Lith. sraw-eti—to flow, strow-e=current,

Russ. stru-ia = strea-m. As. stream = stream. Sarasvati, Sarayu (Kāli, Sarda, Chanka river on which Ayodhyā was situated) with their rivulets, Ye great streams, be gracious unto us. O Goddess Apo (Aquirius), bountiful mother, give us fatty (*ghrita-vat*) and sweet milk (10. 64, 9)".—*Gaya Plata*. "On the other side of the Sarayu, you killed swiftly, O Indra, the Aryas—Arna and Chitraratha (4, 30, 18)."—*Vamadeva*. Sarayu is also mentioned with Rasā, Krumu, Anitabhā, Kubhā and Sindhu (5, 153, 9). *Saras* = water; *Sarasi* = lake. Lat. *serum* = liquid, whey; *seleum* = open sea Gk. Oros = whey; seloes = sea water Skt. stiri = to flow, sari = a waterfall, Sar = to flow, to spring forwards. In Zend Avesta (Far. 1, 9) we find on the river Sarayu (Hari river) Ahura Mazda created the sixth of good lands—Harayu (Hari-rud = Herat). Yavyāvati (6, 27, 6) is the Zhob, an affluent of the Gumal on which Vrichivans (Vrijnivants = Alpines) were defeated by Pārthava (Parthian) Abhayavartin Chāyamana about 1525 B. C. On the Yamunā (Jumna) a present of praise-worthy cattle and a horse I longed for (4, 52, 17)"—*Syavasa Atreya*. Yamunā (the twins—flowing parallel to the Ganga) and Tritsus (a Puru clan, allies of Sudāsa) came to the help of Indra (victor) and the Bheda (Veddās = Australoids) were dispossessed of all there possessions (7, 18, 19),"—*Suvarcas Vasistha*. In Atharva Veda (4, 9, 10), the ointments (*anjana*) whether called trikakuda or yamunā, is equally good. Yamuna rises at Trikakuda (Triakuta) hill at the elevation of 10,844 feet, 5 miles north of Jamnotri hot springs in Tehri state. The *Sarasvati* (as goddess = Eridanus) gave Vadrasva (N. Panchāla king of Ajmira descent about 1475 B. C.) revengeful Divodāsa who freed his father from his debts by destroying the Pani (Phoenician who practised trading and thus selling goods on credit became money-lenders) and his goods. This is a great gift thou hast bestowed Sarasvati (*saras* = water; *vati* = full: waterfull stream 6, 61, 1). She with her might, as one (easily) pulls out lotus stems, has broken rocky ravines. Ravine (*parvata*) tearing Sarasvati, let us praise with our songs (2). *Sarasvati*, destroy the god haters, Brisaya (Bres—a Mongoloid Caren tribe) clever hordes. We have settled on thy stream. Let not its water be poisoned, O

generous giver (3). May the goddess Sarasvati, the mightiest of the mighty, protect us well (4). You goddess Sarasvati are eager for generosity as Indra (Centaurus) is for fighting Vritra (5). Aid us Sarasvati. You are richest of the rich. Give us wealth like Pushan (6). You are terrible (ghorā). O Sarasvati in your golden course (*hiranya-vartini*: golden shine of of the constellation Eridanus) as the killer of Vritra (Hydra=Sea serpent, thereby water was supposed to be released), you deserve our praise (7), whose limitless cataracts, swift-moving, rush forward with thundering noise (8). She has spread with her sisters beyond (the reach) of foes as the rays (*atan*: Egyptian Akhen-aton worshipped the solar disk as the supreme source of existence) of the sun (9). Seven-sistered (*sapta-sindhava*) friendly Sarasvati is the dearest of the dear (*priyā priyāsu*) to us; Sarasvati deserves our praise (10). You shine on the earth, atmosphere and the firmament (the shine of the constellation Eridanus). Sarasvati protect us from slander (11). Seven-sistered, running in three courses, protector of the five races (*Jāta*), you are to be invoked and invoked in every fight (12). In your own glory, you are glorious, for of all streams, you are swiftest like a war chariot. Sarasvati deserves praise from every sage (13). Sarasvati, give us food and wealth. Do not turn us away from you. Deprive us not from thy milk (sweet water). Enjoy our friendship and hospitality. Force us not to migrate to wild tracts (6, 61, 14)"—*Bharaadvaja*. "Sarasvati with her cataracts is our great defence like iron fort. As on a car the flood (Sindhu) flows, surpassing all other waters (7, 95, 1). Alone, Sarasvati of all rivers flows as a limpid stream from its mountain abode to the ocean (*Samudra*). The wealth of the wide universe she bestows as a creamy milk on the dwellers of your shore (*Nāhushāya*=Nahusha peoples: 7, 85, 2)"—*Vasishtha*. Sarasvati, Sarayu and Sindhu are great streams, and are called *Mātarah*—mothers (x, 64, 9). Sarasvati is the inspirer of pleasant songs and noble thoughts (*sumati*). The great vault she illuminates with her light. She brightens the universe (1, 3, 11-12). Sarasvati is the best mother (*ambā*), the best of rivers and the best of goddesses (2, 41, 16). Sarasvati is the most divine (*asuryā*) of the rivers (7, 96, 1). Sarasvati

dwells in high heaven (brihatah divo : 5, 43, 11). So Eridanus was the divine Sarasvati—the heavenly river that shines in the sky. The other river was in the Punjab. Sarasvati means—full of water—the Avestan Harahvaiti (Vendidad, Far 1, 13), the present Arghand-ab a tributary of the Helmand, flowing through Kandāhar. Due to climatic changes, deforestation, alluvial deposits on the river-beds, the rivers have changed their courses even in historic times. Baluchistan was not so arid in pre-historic times as evidenced by the presence of many dried wells and habitations. Mohenjo-daro was built by burnt bricks. That indicates there was a large supply of trees nearby. The good drainage also indicates that there was a heavy rainfall. The presence of animals like tigers, buffaloes rhinoceros and elephants also presuppose the presence of moist lush jungle. Old beds of the Sutlej can be traced over an area 50 miles wide. And many cities which were originally built on the banks of large streams are now of considerable distance from them. Jumna once flowed many miles to the west past the towns of Sonapat and Panipat. It is very likely that the western tributaries of Jumna as Tons once flowed into the Sarasvati. Sarasvati before that time was a mighty river. It flowed through now the dry bed of Ghargara (murmuring—Ghāgar = Hakry) and continuing its course through what is now Nara cannal, emptied its waters directly into the Rann of Kutch. Likewise it is believed Sutlej and Beas confluent fell into the Runn of Kutch. So there were 3 rivers systems in Sapta Sindhu (now 5)—(1) one with Sarasvati, (2) with Sutlej and Beas and (3) the third with the Indus and its tributaries. “Idā (Ila), Sarasvati and Mahi—these three goddesses are delightful (1, 13, 9).” Bhārati, Idā, Sarasvati, I call you all to lead us to glory and fame (1, 188, 8). Idā or Ilāvrit means both the earth and a sacred place. Ida is a mountain in the centre of Crete, closely connected with the worship of Zeus who is said to have been brought up in a cave there. Mt. Ida is on the Dardanelles, from the summit of which, gods watched the battle in the plain of Troy. Urjayanti (2, 13, 8) is Urjayanta = Girnar Hill.

Winter was the most important season (Skt. Ritu = Lith. ruja = Lat. ruji = turgescence of the vulva = Fr. rujir = Eng. rut.

Hence Lat. *ritus*, Eng. *rite* and *ritual* is the time of the veneration (of Venus) of the gods like the duty of the Hindu towards his wife at the close of her Ritu—the menstrual period—the rutting time. Winter (*hima*) robbed forest-trees (*Vanāni*) of their foliage (*parna* : ×, 68, 10). Night (*Rātri*) is the mother of cold (*himasya māta* : Av, 10, 49, 5). This indicates a cold climate where the leaves of trees become yellow in the autumn and fall out entirely in the winter. *Hima* is ancient Indo-Aryan word, meaning snow and cold. *Hima* = Lat. *hiems* ; Gk. *Kion* ; Avestan *Zima* ; Lith. *Zema* ; O. Slavic *Zima* ; Fr. *hiver*. Hence Himalaya—the abode of snow ; the name of the Balkan mountain as *Haemus* because of its cold and snow, separating Thrace and Moesia where dwelt the fierce Alpine tribe *Bessi* (*Vaisya*). *Hemanta* (autumn) = Gk. *Kheimon*. Fields were cultivated each succeeding summer (*samā* : 4, 57, 7). *Samā* = Avestan *hama* ; Old Ger. *sommer* ; Ger. *sommer* ; Eng. *summer*. Year was first counted by only winter (*hima* : *Kaus Br.* 11, 7). Then by both winter and summer. “The first of the good lands and countries which I Ahura Mazda created was the Airya navenjo (*Arya nivāsa* = *Arya home*). There are ten winter months there and two summer months ; and (even) those are cold for waters, cold for the trees. Winter falls there with the worst of plagues (*Yendidad.* 1. 3, 4). This cold climate is only possible in N. Europe or on high mountain plateaus. Later three seasons are mentioned. “Live prosperously a hundred (*satam*) autumns (*sara*), a hundred winters (*hemanta*), and a hundred springs (*vasanta* : 10, 61, 4). *Vasanta* = Lat. *ver*. *veris* ; Gk. *ear* ; O. Slavic *vasna* ; Av. *vanhar*. *Satam* = Avestic *satem* ; Lat. *Centum* ; Fr. *centaine*, *cent* ; Gk. *e-katon* ; Eng. *century* ; Ger. *hundert*. *Sarad* is Avestan *Caredha*, Ger. *herbst* (fruit gathering), English *harvest*. Finally six seasons. Babylonians had six seasons (*sosses*) of 60 days each, and a year 12 months of 360 days. In *Purusa Sukta* (10, 90, 6), winter is dropped out and three seasons are mentioned—*Vasanta* (spring), *grishma* (heat—summer) and *sarad* (autumn). *Pravṛish* is the monsoon (rains) when there is perspiration (*gharma* : 7, 103, 9). According to *Atharvaveda* (8, 9, 10), six months (*māsa*) are cold (*Sita*), and six months are hot (*ushna*). *Ushna* (hot season)

= Lat. aestus; Fr. etc; Gk. aitho). The month is regulated by the moon. The sun has brilliance, the moon (māsa) has beams (10, 12, 7). Māsa=Avestan mäh; Gk. mene; Lith. menu; Goth. mena; Ger. mond; Eng. moon; Lat. lunus (n). luna (F). First the years (*sarad*), then the month (*masa*) and next the day (*ahar*: 7, 66, 11). Māsa=Lat. mensis (menstruation=monthly period; Fr. mois; Gk. mene; Ion. meis; Goth. menoths; Ger. monat; Lith. menesis. Each season consisted of 120 days and the year of 360 days (Kaus. Br. 11, 7). Five intercalary days were added. But the month (māsa) was calculated on the lunation of 29½ days. And 12 lunations of the year of 354 days. Later 12 intercalary days were added. The Ribhus come to the house of the sun (Agohya: 1, 110, 2) and stay there twelve days (4, 33, 7) when they were awakened by a dog (Canis Major). The New year was ushered by the heliacal rising of Procyon (Canis Minor) and setting of Sirius (Canis Major), just after the time of winter solstice about 1000 years ago. These twelve days after winter solstice were also sacred to the ancient Germans.

8.—PEOPLES

Arya (1, 51, 8; 1. 117. 21) is the Avestan Airya. One of the most powerful German tribes was known as **Arios** (Tacit—*Germania*, 43). A Hellenic tribe Ares under the leadership of Sotes (275-228 B. C.) drove out air invasion by Galatians (Gauls). The country of Airya was called Airyana which has been contracted into Iran. In Behistan inscription Darius describes himself of Aryan stock (Darayahvahuš ariyah-cithrah). It is very likely that Erin (Ireland) has been named by the Celts (Gaels) who had some Aryan mixture of blood with the Alpines and Caspians and consequently used a mixed Aryan language (Airem from Aryaman = Erenn). The names like *Arisvistus* have been in both Celtic and German words. Armenia was inhabited by the Aria people from Media, and so got the name. Mitanni people of Mesopotamia who were a horse breeding and iron-manufacturing ruling aristocracy between 20-12th century B.C.

called themselves Harri, a phonetic variation of Arya. After the settlements of the Aryas northern India was called Aryavartta. Aryas came from a cold climate as their years were counted by winters (*hima*). "Let us prosper with our progeny for a hundred winters (*satan himah* : 1, 64, 14). "May we live a hundred winters (*satam himah* : 5, 54, 15). Scatter our foes. Increase our store. Let us enjoy a hundred winters with our great heroes (6, 10, 7). Latin Ara is sacred altar, especially of fire. Aryas were white-complexioned (*svitnyebhih* : $\sqrt{\text{svit}}$ = to shine ; *sveta* = white ; Lith. *Szweitye* = white, clean ; Russ. *svietite* = to shine, to give light ; *svietlui* = bright, light ; Ger. *weiss*, Eng. *white*) : Indra got land for his white-complexioned friends (*svitnyebhi sakhibhi* : 1, 100, 18). Bharadvāja was tall, lean and auburn-haired (*Ait Br.* 3, 50). Snu in Sanskrit means mountain peak which in a cold climate usually remains snow-covered and in all Indo-European languages the term is common. Snow = Ger. *Schnee* ; As. *snaw* ; Goth. *snaiws* ; Lith. *snegas*, *snigti* ; Avestan *snizh* ; Gael. *Sneachd* ; Lat. *ningo*, *ninxi* ; Gk. *nipha* ; Gael. *snidh* = ooze in drops ; Ir. *snidhe*, a drop of rain. Skt. *snih*, sticky or oily ; *sneha* = liquid, fat ; *snuruc* (bright, Chandraniva, like the moon : 2, 2, 4). Vasisthas are white-complexioned (*svityanco*) and wear pigtales on the right side (of their heads : *dakshinatas-kapardā* : 7, 83, 1). Tritsus (a Puru clan) too are white-complexioned (*svityanco*) and wear pigtales (*kapardins* : 7, 83, 8). Skt. *svita*, *sveta* is Russian *svietetc.*, AS. *wit*, Eng. *white*. No doubt common language does not mean common race. Conquerors can easily impose their language on the conquered. The Negroes in U. S. A. speak English and have entirely forgotten their own tongues. The Negro slaves were imported from different stocks. So even to make themselves understood to each other they had to use the language of their masters. Amerinds of Central America speak Spanish. But when we find that the Indo-European languages with common roots are spoken by various peoples, there was a common cradle where the language was developed, and from which they have dispersed in different directions. And the people who developed and nurtured the Indo-European languages are the Aryans. Where is their primitive habitat—their home ? The Aryan had domesticated dog, ox, horse, ship, pig, goat as

we find the Indo-Europeans had the common names for them. The cow is a woodland animal. It needs succulent grass and a good deal of water. The new-born calf cannot follow its mother. It can walk very feebly and its eye-sight is defective. It has to be hidden in a thicket behind trees so that wolves, bears and jackals which were common ferocious animals cannot prey upon it. Oxen drew the wagon and the plough. Cow's milk, cream and cheese were important articles of food. When a member of the family died a cow was killed and its parts were put on the dead body to supply him with food and meat in the next world (Asvalayana Grihya Sutra ; 4, 3 ; the ritual manual of Asvaka—Assi tribe). A cow was offered to an honoured guest. Cows were the object of armed raids between neighbours and hostile parties. Cattle formed the main wealth. The horse on the other hand is an animal of the open plain. Sk. *asu* = Gk. *okys*, Lat. *acer*, meaning *swift*. Hence Sk. *asva*, Gk. *hippos* and Lat. *equus* mean *swift runner*. The Aryans were horse-breeders. Madra and Kekaya kings were known as *asva-patis*—possessors of horses ; Iranian *Vistaspa*—well-dressed horse ; (= *Istasva* : 1, 122, 13) ; Gk. *Philippos*—the lover of horses ; Scyth. *Aspourgos*—who has many horses ; Celtic *Epopennos*—chief of horses. The foal always accompanies the mother, for at first its neck is too short to allow it to graze ; and the mare unlike the cow has no large udder in which she can carry as large supply of milk for her foals. A steppe open grassland is suitable for the horse. The sheep which supplied the Aryans with its skin and wool for clothing, and its meat as a nourishing food, prefers a short grass to the richer pastures suited to the kine. The goat is a climber and likes low hills. The pig is a denizen of the forest where beech mast, acorns or chestnuts are plentiful. Serpents (*sarpa* : √ *sarp* = to slip along, glide, creep. √ *sar* = to flow, *salila* = water, *Sarayu* = river, *sarpi* = liquid butter. Gk. *ert-ein* = to creep ; Lat. *serp-ere* = to creep, *repare* (*srep-ere*) = to creep ; Goth. *sliup-an* = to slip, *salb-on* = to anoint, As. *sealf*, Eng. *salve*) prefer fallen leaves of the forest under which they can silently creep and glide forth. The mouse and hares require forests and fields. Aquatic birds like swans and ducks require lakes and rivers. The otter and beaver need streams, rivers and lakes (*udra* = otter. √ *ud* = to well, to gush, to moisten, to wet ; *udra*

which lives in water. Lith. udra; Ger. ottar; Gk. udros, udra (water-snake); Russ. vuidra; Gk. ud-or; Lith. wand-u. Skt. ud-an, ud-aka=water; Lat. unda=waves; Hittite vadar=water.) It weighs about 10 kilos. The fur consists of a short soft gray underfur. The beaver is an aquatic rodent inhabiting Europe and N. Asia. It is now confined to the Elbe, the Rhone and to parts of Scandinavia (babhru=Lat. fiber=Russ. bober=Ger. biber; Lith. bebrus=Old Slav. bebru=Avestan bauri). And falcons used to build their nests on high trees. Quails used to sing from the branches of the trees. When during the spring the trees were in blossom, the bees buzzed to gather honey of which the Aryans were very fond. The reeds grew along the rivers and lakes and from them shepherds made their flutes. The vedic *tunava* is Gk. Tonos, Lat. *Tonus*, Fr. ton, Eng tones, tune. The hills were covered with conifers and birch from which the wheels, bodies and yokes of wagons were made as well as lances. Another tree was possibly willow (poplar) which grows only in cold and temperate regions. Willow=As. with; Lith. *wytis*; Gk. itea; Lat. vitex; Avestan *vaeti*; Skt. *Vitapi*, a designation for trees in general. Aryans were pastorals. Men were hunters, shepherds and fighters. Women developed agriculture and fruit raising by putting into the ground seeds of plants, which they found growing on the kitchen refuge. They used a forked stick with two branches, one forming the handle, the other the pole as plough. And such a kind of plough with a pair of oxen has been represented in the rock carvings of Sweden and Alps of Bronze Age. Thus barley was cultivated. Heraclides says of the Athamanes (*Fragmenta hist. Graec.* 11. 219) that the women were agriculturists while the men were shepherds. The country was well-watered not only from the melting snow, but also from rains. For from the root, **Pat** we find Skt. path (footway), *pantha*=to travel, Gk. pat-os=path, Lat. pons=passage, Fr. pont=bridge; As. paed. Perhaps the Lat. *Vedum*=passage over water, and *vadro*=fording a river have come from the same source. Possibly fallen large tree-stems over rivulets were used as bridge. And birch canoes were used in crossing large rivers and lakes. There is no common name for Ocean except Skt. *salila*=Gk. *selias*=Lat. *saleum*=Goth. *saiws*=sea. They also had iron, at least, copper mines

in their regions. For by the use of iron and horse they could conquer other peoples who had only bronze and copper as metals for war-instruments; and had oxen, camels or asses as their carriers which are not swift-moving like the horse.

Where is that Aryan cradle? It cannot be Central Asia. For here on the semi-desert region the camel roams freely. And camel has no common name in Indo-European languages. Moreover it is not well-watered. It lacks forests. Particularly no honey-bees are found there. It can neither be the Caucasus region. For tigers, panthers and hyenas abound here, and they have no common names in Indo-European languages. It cannot be also Macedonia and Anatolia, for here lions were common, according to Herodotus, in third millennium B. C. and they are unknown in Indo-European languages. It cannot be either Mesopotamia, or Egypt. For these lands lack conifers. And the common beast of burden was the *ass*. And lion was common. Amorite Hammurabi (an Aryan—Amara Kshamarabi) introduced horse about 2000 B.C. in Mesopotamia, and it was known as the *mountain ass* of Media. The Hak-satiu (prince to the foreign lands: Hyksos—Shepherd kings) introduced horse into Egypt before which it was unknown there. The Sumerian name of ass was *ansu*, from which the Gk. *onos*, and Lat. *asinus* have been derived. It was hardly known in Homer's time.

Now the question of Sapta Sindhava which is regarded as the home of the Aryans by many orthodox Hindus, as they say that they have no traditions of the Aryan migrations from abroad. They do not deny the common roots of Indo-European languages, but they say that the Aryans might have migrated to Iran, Irak, Armenia, Georgia, Anatolia, Greece, Rome, Russia, Lithuania, Prussia and Scandinavia. And they are known as Airyas in Iran, Harri (Arya) Mitanni in Mesopotamia and Syria, Khattis (corruption from Kshatriya) in Anatolia, Yavanas in Greece, Slavs in Russia and German (corruption from Sarman) in Prussia. But these are contradicted by philological, anthropological and archeological facts. "The lord of our ancient home (*pratnasyankasa*) I invoke to resist (the enemies), whom our ancestors invoked in olden times (1,30,9)".—*Sumahsepa Ajigarti* (*Devorata*). According to Puranas Ikshvaku had a son Vikukshi; Vikukshi's 15 sons ruled north of Meru (Merv) and 14 sons

south of Meru (MP. 12, 22-28). "Soma drinker thunder-armed friend (Indra) is the friend of our lovely-featured dames (1, 30, 11). These lovely-featured white-complexioned people could not develop in a tropical climate. Moreover elephants, rhinoceros, tigers and buffaloes were known in Mohenjo-daro, as depicted in seals found there. If Aryans migrated from India, they certainly would have been found in Indo-European languages. But they are not. And moreover though Indo-European words have been well-preserved in the Vedas and in Sanskrit literature due to the fixation of grammar by Pāṇini, the word-formations from the common roots are less archaic than in other cognate languages. Though not the root known, Lith. *wyra*, Gothic *wair*, As. *wer*, Teut. *wer* mean *man*. Lat. *Vir* means both man and husband; and from it *Virtus* (virtue) and *Virilis* (virility) have developed. Avestan and Vedic *Vira*, Gk. *eros* means hero, from Gk. *eros*, Lat. and Fr. *heros* means demi-god. Indo-European languages are known as centum (pronounced as Kentum by the Romans) and satem groups, from the variation shown in the word for 100. Lat. centum, Gk. *eskāton*; Lith. *szimtas*, O. Slav, *suto*, Avestan *satem*, Skt. *satam*. In the first the consonant is hard and guttural. In the other it is sibilant. Thus Gk. *kuon* (dog), Lat. *canis*, becomes in Lith. *szuo*, Skt. *sva*. The chief centum languages are: (1) Greek with archaic forms in Arcadian; (2) Latin; (3) Celts in 2 groups; one group changes *qu* into *p* (ancient Gaulish, Welsh, Cornish, Breton; the other represents *qu* by *c* (Irish, Scotch Gaelic); (4) Teutonic: (a) Gothic, (b) Norse (Danish, Norwegian, Icelandic, Swedish, (c) West Germanic (Low German, Dutch, English); (5) Tocharish (Tukhara) found in Chinese Turkestan; (6) Khatti (Hittite), Mitanni. Satem groups consist of: (1) Lithuanian (Lettish, Old Prussian); (2) Old Slavonic; (3) Albanian (including ancient Illurian); (4) Armenian; (5) Avestan; (6) Sanskrit.

Manu (1, 67) says: one full year of man makes one day and night of the Devas. The northern solstice is their day; the southern solstice their night (Manu. 1, 67). This is only possible in the North Polar region between 80°-90°. But the Polar Region has not been habitable since man has evolved which is not more than a million years. In *Kaus. Br.* (19, 3) we find that on the

new moon of Maghā (Regulus in Leo), he (the sun) goes north for six months. Having gone north for six months he stands still, being about to turn southwards. He goes south for six months. Ordaining the days and nights, like a cunning spider, for 6 months south constantly, for six (months) north, the sun goes." If the observation is correct, there is now a difference of about 90° , due to precession of equinoxes, the constellations being distant from each other by 30° . There is a shifting of one degree in 72 years. It indicates therefore that the sun was in the Leo at the equinox about 6480 years ago. Now the vernal equinox is in Taurus. As the zodiacal calculations took place about 2100 years ago, we come to about 2380 B. C. which is not improbable. In the marriage ceremony the husband shows the wife the *Dhruva* asterism, saying "firm be thou like that" (S. G. S. 1, 17, 3). *Dhruva* is the Thumban in Draco which was the polar star about 2000 B. C. Thumban was also the pole star to the Egyptians when the great Pyramid of Ceops was built. The Earth besides rotating on its axis, and revolving round the sun, reels like a mighty gyroscope, but with so slow a motion that it takes nearly 25,900 years to make one complete revolution on its Polar Axis. About 4000 years ago the path of the Pole passed through Thumban in Draco (*Manasā* = Dragon). And it has not yet reached its nearest to Alpha Polaris in Ursa Minor which it will do 300 years hence. And in about 18000 years (half a revolution of the Pole) from the present, the bright star Vega in Lyra will occupy the same position with regard to the Pole as Polaris now does. With 34 lights Indra looks around him (\times , 55, 3). 34 ribs of the horse (out of 36) are cut, and each is named after a god (the sun the moon, 5 planets, 27 Nakshatras or asterisms: 1. 162, 18). "Like a dark steed adorned with pearls (*Krisan*) the fathers have decorated the sky with *nakshatras* (\times . 68, 11)". Soma is placed in the midst of *nakshatras* (\times . 85.2). *Kirttikā* heads the list of *nakshatras* (Ts. 4, 4, 10; Av. 19, 1, 3-5). The vernal equinox in *Krittikā* (Pleiades) took place about 2300 B. C. and not later than 1800 B. C. Where is then the Aryan Cradle? Asia can practically be excluded for *√ melia* for honey is not found in Asiatic groups of Aryan languages, while it is well-represented in European branches. And the Aryan languages in Asia are quite few and

isolated, while in Europe they are well-spread and extensive. The Baltic shore is not possible, for from ancient days it has been famous for its amber (fossilized resin of an extinct pine) exports, and amber has no common name in Aryan tongues. Valdai Plateau seems to be the region. Here all the common animals and trees are found. This region is full of lakes, rivulets and marshes. From this plateau following the Dvina the Aryans could reach Lithuania and East Prussia and then into Scandinavia, Germany, and England. And through the Dnieper into the Black Sea region. Following the Danube Aryans reached Greece, Albania, the Italian Alps. And especially through the Mother Volga they reached Central Asian plains. At that time the Caspian was a bigger inland sea being united with the Aral and possibly the Black Sea. An earthquake opened the Bosphorus and drained away their waters and lowered their levels. The Aryans settled in Meru (Merv). From there one section entered Iran through Meshed and Demavend (Kasyapa: from which the Caspian Sea has been named) defiles. The Mitanni Haris (Aryas: Bib. Hori) like the Cimmerians through the Caucasus Darial Pass reached the Enphrates highlands. Ossets (Iron-man) also entered Armenia and Media through the Darial Pass where the Ossets are still found, slightly mixed with the Alpines, and speaking an Iranian dialect. Another branch following the Hari River (Hari-rud-Sarayu) and Harahvaiti (Sarasvati—the present Argand-ab, a tributary of the Helmand) reached Gandhāra (Kandahar) and thence into the Sindhu (Indus) plains. Another branch, possibly the oldest, following the Oxus reached the Kailasa (Pamir Plateau: Kailāsa is the Lat. caelum, also coelum = the upper region of the earth, the heaven; and Gk. Koilon). Then through the Kali gorge they reached the Sarayu (Sarda) plains and established the Ikshvāku Ayodhya Kingdom.

Through the Russian steppes the Negroes and Australoids were driven northward by the pressure of the Mediterraneans and the Caspians. Fused together they formed the Chudes (Sudra) who are still found in Estonia. The upturned nose tips of many white Russian peasant women still betray the mixture of the Australoid with their concave nose. The antiquities of Chudes are found all over Russia, Urals, Altai

and western Sibaría. By the pressure of the Alpines the Mediterraneans and the Caspians were forced into the refuge areas of the Valdai Plateau. There blended with the Chudes, the Caspians and the Mediterraneans developed into the Aryans. Aryans were blond tall dolichocephals. They had blue eyes, golden hair. Their nose was long, straight and high, but variable. Their eyes were elliptically shaped like almonds or gazelles. They were nearly 6 feet tall. They were muscular, but lean. They were horse-breeders. They knew how to make iron. They burnt their dead. The widows of their chiefs were burnt with their husbands on the high funeral pyres. They were proud, valiant and clannish and patriarchal. With their rapid moving fine horses and terrible penetrating iron lances they imposed their authority over other races. In spite of their vanity and racial pride they knew how to assimilate the higher civilizations of the Alpines, Mediterraneans and the Palae-Alpines, whom they conquered, though retaining their religious customs, myths and languages of their own, and trying to preserve their racial purity.

Dasas and Sudras were slaves. "By whom all the peoples were made to tremble; who chased away the slave peoples (*dāsam varnam*); he who like a gambler gathering his winnings seized the properties of enemies for the benefit of Arya, know ye men, he is Indra (2, 12, 4). *Dāsas* (slaves were of various races. In battles Indra helps the Arya that brings him offerings. In every battle he brings hundred helps for the benefit of the worshippers. Punishing the lawless he delivered the blackies (*Krishnam tvacam*=black-skinned) to the Mediterraneans (*mānave*=Manu's descendants); as fire burns every faggot, so he burnt him like a faggot (1, 130, 8)." — *Parucchapa Daivodasi* "We have reached a country, void of pasture, O Gods; the land though spacious is unsuitable to us. Brihaspati, as a relief, give us cattle. Find a path for this faithful singer (20). From day to day, from their dwellings, from place to place he drove the blackies (*Krishna Jah sadrisir*=like the black) Indra (*vrishabha*=bull, Indra's carrier) slew the bargain-hunting and water-loving *Dāsas*, *Varchin* and *Sambara* (mixed Cimbri: 6, 47, 20-21)—" *Payu Bharadvaja*. "Thou slewest the noseless (*anāsā*=small snub-nosed, particularly of

the Negritos) Dāsya with thy weapon and overthrew in their own homes the hostile speakers of a strange language (mridhravācaḥ ; 5, 29, 10).—*Gauriviti Saktya*. Daci (Gk. Daos, Dakoi) was the common name for slaves. The place they lived in was called Dacia, corresponding in the main modern Rumania and Transylvania. The inhabitants of this district were of Thracian stock (Caspians). Of the other Thracian tribes, the Getae (Jāts) were most akin to them in language and manners. By the Greeks the Dacians were called Getae, by the Romans Daci. In Attic comedy Daas and Geta were common terms for slaves. The Dacis dwelt in wooden huts surrounded by pallisades, but in later times, aided by Roman architects, built walled strongholds and conical stone towers. Their chief occupations were agriculture and cattle-breeding. Horses were mainly used as draught animals. They also worked the gold and silver mines of Transylvania. They were divided into two classes, an aristocracy and proletariat. The first alone had the right to cover their heads. The second class who comprised the rank and file of the army, the peasants and artisans, wore their hair long. They believed in the immortality of the soul, and regarded death merely as a change of country. Their chief priest held a prominent position as the representative of the deity upon earth ; he was king's chief adviser and his decisions were accepted as final (11 E. B. *Dacia*). Because the Germans enslaved the Russians by capturing them as prisoners of war, they were called—Skalves ; Slavs. So the inhabitants of Transylvania and Rumania being enslaved by the Aryans were called Dāsa (Daci—or slaves). When these people were driven to Central Asia, they were called Dahae ; the native inhabitants—Turanians (Turvasus—Mediterraneans) and Daityas (Mongoloids) were included among Dahae. When the Aryans (Aryas) arrived in India, all the conquered peoples as black skinned and noseless Negroes and Negritos, Sambaras (Cimbri), Cumuri (2,15,9 : Cimmerii), Dāsas (Daci), Sudra (Chudes), when they offered any resistance were called Dasyus—(Av. daqyu—Beng. dākāit), robbers—quite modern diplomatic terms. Because Chudes were enslaved, servitude has been associated with the Sudra. And Sudra and Dāsa became the general contemptuous terms for slaves. If Indra,

Agni, with Yadus, Turvasas, Druhyus, Anus and Purus you sojourn, even from thence, O bulls, come hither and drink offered Soma drinks (1. 108, 8). In Ten Kings War (7, 18) Dāsas (Dacians) became victorious. North Pāñchāla Sudās (1885 B. C.), of Ajamira Dāsa descent, fought against and defeated the Turvasas, Druhyus, Anus Purus and others. Sudāsa's ancestor Divodāsa (1465 B. C.) already had defeated Sambara (Cimbri), Yudu and Turvasu (9, 51, 2).

Anus (Ainyu : Yast 122) were Palae-Alpines. Sumerian (Purānic *Sumeru*) Anu from ancestor worship became the heavenly father **Anu** (a name of Vishnu) or *Enlil*.

The Palae-Alpines are industrious, frugal, and of cheerful and jovial disposition. They are of democratic tendency, though capable of a great discipline. Their women have been always enjoying a great amount of freedom as in Burma of modern period. The Palae-Alpines developed agriculture. They raised fruits and barleys. They made buildings with wet clay. The use of reeds allows of large construction with rounded tops. This wattle building was then used with sun-dried bricks, mortared with clay. Burnt bricks were introduced by the Alpines with bronze about 3000 B. C. The men and women used to wear plaited grass or skin. Men were shaved. In sculpture the earliest type is a cross-legged naked seated figure. Copper, gold and silver were known and well-utilized. In an ancient grave at Ur to depth of 30 feet below the surface level has been found the gold-plated sword of Kalam Dug—the Hero of the Good Land. Here have been found the skeleton of 4 servants and one lady with the cylinder seal, inscribed with the name King Mes Kalam-Dug. She wore a headdress of gold ribbons radiating in seven strips from the center of the head, a wealth of gold poplar leaves strung with cornelian and lapis lazuli beads and around the neck gold chains and cornelian beads. Her cloak was fastened at the shoulder by a heavy gold pin with a curved head surrounded by a cornelian bead; she had gold earrings and finger rings. At her hand was a fluted gold tumbler. She possessed an engraved gold cylinder seal. On the seal were depicted men carrying offerings, one of which was a lyre surrounded by a bull's head. Numerous were the vessels of copper, stone and clay. The place

was littered with animal carcasses, including sheeps. Was she the high priestess or the queen (N. G. M. Jan. 1930) ?

Palae Alpine skulls have been found at Harappa. They are the Anus. And they spread over the Punjab up to Bihar. Anus were defeated by Pāṇchāla Sudas. In Rig Veda (X, 59, 10) we find Usinārini's waggon. Usinara (1900 B. C.) was a famous Anava king. This is either his wife or more likely reigning queen of the Usinara dynasty, as women had great privileges. Usinara's son was Sibi. Sibi Ausinara is the author of X. 179, 1. Sibis were conquered by Kausikas, Madras, Kekayas, Ambasthas Nabhas. "O Lord (Saspati) Nabha, the giver of prosperity (samsphāna), protect us from oppression (asamāti) in our houses (1). O lord Nabha, maintain us so that we can stay at home (2). O Lord of prosperity, you have a thousand ways of maintaining us. Bestow one of them upon us. Give us one so that we may be sharers of thy prosperity (Av. 6, 79, 1-3)". Indra helped Kadru, Yadus and Turvasas (8, 45, 26, 27). Kadru is light-yellowish complexioned. They were the Palae-Alpines. They inhabited Kandahar province. And from their settlement, that region was named Gedrosia by the Greeks. Asagarta (Sagartian : Puranic Asvatara, Asvagrībhas) lived in Eastern Zagros (Ptolemy 6, 2, 6). It was the Asis (Saka)—Asvaka, Tocharian tribe). Indra destroyed the Varasika (Vālisikha) in aid of Abhayavartin Chāyaman (6, 28, 5).

Traitana (1, 158, 5) is likely to be a mixed Alpine, Tatar (Puranic Tittiri whose sacred book is Taittareya Samhitā). Tugra (1, 116, 3; 1, 158, 3) who came in a hundred-oared vessel (1, 116, 5) is Turgash or Turkish tribe belonging to Hiung-nu (Huns : Puranic Nāga). Sanakhas (Puranic Sankha whose rituals were Sankhāyāna Srāuta and Grihya Sūtras) were wealthy, and though long-settled they fled (1, 33, 4) before Indra-worshippers. Alina (7, 18, 7) is likely to be another Hiung-nu tribe—Ashihna, Sankha tribe of the Puranas. "Indra listen to Prithi's (Parthian) call, O hero, and get thyself praised by Venya's hymns (X. 148, 5)"—Prithu Venya. "This have I (sung) before Duhsima Prithuvana, Vena, Rāma Asura (Assyrian) and hereditary nobles. For their love to us they yoked 500 (oxen) which gave them fame (14). Besides they showed us seven and seventy horses. Tānva at once displayed his gift; Parthya

(Parthian) at once displayed his gift; and Māyava displayed his gift (X, 93, 14-15).”—Tanva Pārtha. “You Indra, for devout Astrabudhna liberated Venya among mankind (X, 171, 3)”. It is mentioned in the Puranas that Prithi Venya introduced agriculture by removing stones and levelling the ground. Before his time people used to live on hunting and wild fruits and tubers. “Her (Prithivi=earth) Prithi Venya milked; from her he milked both cultivation (krishi) and grain (sasya); upon these cultivation (agriculture) and its produce (sasya) men subsist (Av. 8, 10, 24). According the Puranas Vena was a ruler in Anga (Southern Bihar). He did not believe in Vedic rites. His son Prithu came under the Vedic influence. He drove away the black pigmies—Nishādas (Negrito) with short and wide nose (uru nāsa) into the Vindya Hills (Vāyu P. ch 63). Nāsa is Lat. *nasus*; Lith. *nosis*; Russ. *nosu*; Ger. *nase*; Fr. *nez*; Eng. *nose*. Arbuda Kādraueya Sarpa (Nāga) is the author of Rigvedic (X. 94); Jaratkarna (MBh. Jaratkāru) Airavata Sarpa of Rv. X. 76; Sārparājñi (queen of the Sarpas) of Rv. X. 189; Urdhvagrāvan Arbudi of X. 175. Sesa Nāgas are Sses of Sogdiana (Sudugdha), and Vāsuki—the Usuives (in Hinza-nagar, the language is Barusaski). **Abhiras** are the *Avars*, and *Gurjars* are the *Khazars*. Khazars came mostly with the Saka and Huna conquests. The Hunas were dominantly Palae-Alpines, but were mixed with Mongoloids and Alpines and they absorbed various other racial elements during their conquests, either through the capture of slaves or otherwise. Sakas worshipped serpents. And believed the existence of mermaids (Nāgini), having the form of very pretty maiden above the waist and that of a snake below, usually in a coiled form. They were eternally young, voluptuous and seductive and endowed with prophetic powers. The Hunas (Hunus: Farb. yast 100) were pretty people with regular features, as for examples the Hungarians. When their father died, the son married his step-mother. When elder brother died, younger brother married his brother's wives; exchange of wives was common. On the 1st, 5th, and 9th of the lunar months of the year, they made offerings to Heaven, Earth, ancestors and spirits. Hiung-nu lived on horse-back and moved about from place to place in search of fresh pasture. The adults were expert archers. Their food was flesh.

and milk, and their clothing the skins of animals. Old peoples were despised and neglected. Their punishments were severe. Marriage was by arrangement with their parents, not by capture. The dead were kept for sometime after death, and the mourners gashed their faces. Amusements included singing antiphonically, playing dice and drinking *koumiss* till they were drunk. They sacrificed to heaven and to the spirit of their ancestors (11 *E. B. Turks*).

At Khafage, 8 miles northwest of Bagdad, an ancient temple has been unearthed of Jemdet Nasar period (about 3000 B. C.). Here a stone statuette of a Mongolian (or mixed with Palae-Alpine) has been found with open breasts and flounced skirt. There is a nude headless mother goddess of Palae-Alpine type with well-developed globular breasts and thighs before whose offering stand, there is a stone representation of a bull being sacrificed. There is an ancient Babylonian cylinder seal (now in Dresden Museum) where a man is offering before a Mother Goddess two basketfuls of fruits and two goat-shaped libation vessels with spouts on their back (I. L. N. Sept. 28 - 1936). At Khafage, predynastic Sumerian findings of about 3000 B. C. show limestone amulets of wild boars, bulls and adorsed two fish. A lion-headed eagle, carved in schist, with a separate tongue of red jasper, bearing an archaic undeciphered inscription in the moon god's temple. Figures of Mother Goddess or temple women with marks of tatooing on the shoulder. Necklaces of beads of glazed steatite, cornelian, agate and shell, strung together with bored holes. Girdles made of cut shells, sewn on a piece of material. A green stone vase in which when four cows come back to the muck-yard from grazing, their bellies distended with feeding, their calves skip wildly towards them, lowing, gamboling all the while (compare Rv 8, 88 (77, 1). A plaque relief of victory banquet or the wedding feast of the Fertility Goddess, at the end of which all the participants broke their goblets. A copper war chariot drawn by two asses (I. L. N, sept. 14 - 1935). "As cows low to their calves in stalls, so with our songs we glorify you, O Indra (Rv. 8, 77 (88), 1). "Like a charioteer (O Indra) come swiftly to us as calves rush skipping

delightfully to their mothers (Rv. 8,84(95), I). The Palae Alpines domesticated many animals at Anau.

Turvasus and **Yadus** came by the sea route (6, 20, 12; 1, 174, 9), without being drowned (4, 30, 17) and from very far (parvuatah; 6, 45, 1). "Raging billowy waters roared, O Indra, like the cataracts, as over the ocean (samudra), O hero (sura), you brought safely Turvasa and Yadu (6, 20, 12). Vedic Turvasa is the Puranic Turvasu (Vāyu P. ch. 99), Avestan Turans (*Tura*: Yasna, 46, 62), Turvazus of Palestine, the Mediterraneans. **Yadus** are the *Yutiya* (Utians) of the inscription of Darius (*Beh.* 3, 40), inhabiting Pars, Fars, from whom Parsis and Persia have been named). It is therefore likely that the Turvasus (Turans) and Yadus (Yutiya)—the Mediterraneans and the Alpines—pressed by the formidable Aryas sweeping over Iran like a hurricane, were compelled to leave Fars, and reached the Indus basin over the Persian Gulf. The Mediterranean and Alpine crania have been found at Mohenjodaro. **Tugras** (Turgash=Turks) came in hundred-oared vessels (sataritrān nāvam: 1, 116, 5). The Mediterraneans and the Alpines were great sea faring peoples and expert ancient navigators. The Mediterraneans were known in this country not only as Turvasus, but also as Manu, Mina, Mānava, Matsya (Av. Mashay): Egyptian Menes (Mena) Ir. Man; Ar. Minni (Jer. 60. 27); Minos, king and legislator of Crete; Mannus, as a deity of the ancient Germans according to Tacitus; three main branches of Germany sprung from 3 sons of Mannu (11 E. B. Teutonic peoples). Skt. Mānusa = Russ. muzhu—O Bulg. manzhi—Ger. man—Eng. man. Lat. mas—Gk. menos=males. Manu is the leader of men (grāmani X, 62, 11). Mina tribe in Rajputana and Mina-var clans in Dravira are found. Indian boats have metallic eyes in the bow of their large water crafts. The oculus decoration in the prow of the boats was the Minoan custom. Egyptians thought boats needed eyes to see their ways through, and oculus represented the eyes of Osiris. The Greeks and the Romans borrowed the custom. Greedy people send their boats to the sea. "Through Agni (fire signal or Agni as a god) we call on Turvasas, Yadus and Ugradeva from far, Agni, bring Navyavasta, Brihadratha and Turviti to subdue the foe (1, 36, 18)".

The Mediterraneans have slenderly built body with medium long skull, small mouth, thin lips, well-arched forehead and smooth eyebrow, wavy hair, nice beard (of dark-brown colour), beautiful almond-shaped eyes. They practiced burials of their dead in long burrows which have been found at Harappa on the top strata of which there are jar burials of the Caspian and round burrows of the Alpine. The Mediterraneans are a very artistic people of keen intellect and vivid imagination. The Mediterraneans invented copper tools which gave them control over their neighbors. Their face has grace and vivacity. The tendency to undue fleshiness is rare. The secondary sexual characters are well-developed. The breast is hemispherical and firm. The pelvis is ellipsoid, but large. There is an undulatory wave of beauty and harmony all over the whole body. Nahusha (1, 31, 11 : Bib. Noah) lived on the banks of the Sarasvati (7,95,2). Kanvas desire the horses of the Nahusas (8,6,24). The tribes of Nahus (a variation of Nahusha) were subdued (7,6,5). Nahus won a battle (9, 89, 2). Rv. 9, 101, 7-9 has been ascribed to Nahusha due to suggestion inferences or to glorify the ancestors (x, 806). Nahusha descendant is Yayāti (1, 31, 17) who resembles Bib. Japheth or Cretan Iapyx. Like Noah who is the father of 3 races—Shem (Semities), Ham (Hamites) and Japheth (Javan = Ionians) Yayati is the progenitor of the Five Races—Turvasu and Yadu by his wife Devayāni, daughter of Bhrigu Usanas Sukra, and Druhyu, Anu and Puru by his wife Sarmisthā, daughter of Dānava ruler Vrisaparban (Vāyu P. Ch. 93, 15-17). To Yayāti, has been ascribed the composition of Rv. 9, 101, 4-5. According to Purānas, Ila (Mt. Ida in Crete. the sacred mountain of the Minoans) had a son Pururavas Aila. Pururavas married nymph (= bride, maiden) Urvasi. They had six sons—Ayu, Amāvasu etc. Urvasi deserted Pururavas. This episode is described in a fine dramatic poetry (x, 95). Ayu resembles the Chinese king Yao (2357-2258) who in 2300 B.C. determined the vernal equinox in Mao (Pleiades = Kirtikā). Ayu married the Dānava Svarbhānu's daughter Prabhā, and their son was Nahusa. Nahusa married his step-sister Virajā, and they had two sons—Yati and Yayāti (Vāyu P. Ch. 91-92). There is a Nashi tribe, called by the Chinese Lolo in the gorges of the Yellow River in Western China near Tibetan border. Though

there are Mongoloid mixtures among the Nashis, yet many of the tribes are six feet or even taller, are lean, have fine brunet complexion, straight long slender nose, and broad elongated face (N. G. M. July 1:31). It seems there is also some Caspian admixture among them. Ayu, Kutsa and Atithigva were brought under submission of the young Susravs Turvayāna (Ikshvaku Taryaruna 1, 5; 10; 2, 14, 7) Ayu knew the ancient formula (purvayā nivida) to invoke Agni (1, 96, 2). Rv. 9, 106 is ascribed to Manu Apsava, Cakshus Mānava. Turviti (1, 112, 23; 2, 13, 12; 4, 19, 6) is the Avestan Taurvati (Farb. Yast 115), and Palestinian Turbazu, an allied Turvasu clan. *Kurunga* is an opulent king of the Turvasas (8, 4, 19). Turvasa Purodas urged by Matsyas (a Mediterranean tribe) and *Yakshu* (Vedddhas: Kushans) and driven by famine was eager for spoils. The Bhrigus (Bryges=Phryges) and Druhyus (Druses) came to their aid. Friends helped the friends (6, 18, 6). Matsya Sāmmada or Mina (Minoan) rājaputrah are the joint composers of 8, 56 (67). They prayed to Aditi: "Wide-ruling and far-spreading grant our progeny protection so that they may expand while living (8, 56 (67), 12". From the settlement of the Matsyas, Jaipur area was called in ancient times Matsya. A Mina (Meena) tribe is still found in Rajputana. Turvasu clans migrated south, and four sons of Duskrita—Pāndya, Kerala, Chola and Kulya—established kingdoms after their own names—Pāndya (Madura and Tinnevely. There is a Minākshi goddess in her magnificent temple at Madurā—the patron deity of the Mediterraneans), Chola (Coromandel coast, where the Andras, the Mediterraneans established a mighty empire), Kerala (Malabar, Canara and Travancore) and Kulya (Kuntala=Kamāta: *Vayu* P. Ch. 99, 5-7). Sāryātas (1, 51, 12) pushed their way to Gujrat, possibly as an advance guard of the Yadus. After Sāryati's descendant Gujrat was named Anarta. Anarta's sister Sukanyā was married to Bhārgava Cyavana. Their capital Kusasthali was occupied by the Veddaid-Negro mongrels—Punyaajana Rāksasas. The scattered and fleeing Sāryātas joined the Haihayas (Alpines) as a tribe among them (*Matsya* P. Ch. 69). Navāgvas (1, 33, 6) whose priests were Dasagva Angiras (4, 51, 4) seem to be identical with Nabhanedisthah (Av. Nābhanazdistha: ×, 61, 18) belonging to the Bessi (Vaisya tribe) Alpines who

founded the Vaisali dynasty. They might have descended into Visāla territory through the Tapati or Iravati (Gogra) from Tibetan plateau. The hymns x, 61 and x, 62 have been ascribed to Nābhanedistha, because his descendants are mentioned there in. The poems are of much later date for the name of Kakshivan (x, 61, 14) who lived about 1700 B. C. is found therein. Nābhaga's son was Bhalananda. Bhalananda's son is Vatsapri (2025 B. C.) to whom has been ascribed the hymns of 9, 68; x, 45, 46. One of their descendants is Trinabindu (1600 B. C.). Trinabindu's son was Visala who founded the great city of Vaisali, famed in Buddhistic legends. Trinabindu's daughter was **Dravirā**. Dravirā was married to Pulasta Palasti: 3, 53, 16). From Dravirā South India was named after her—**Dravira**. (Pulasta rulers were called Rāvana, as Mithila rulers as *Janaka*, and Kekaiya rulers as Asvapati). Poligars of the Deccan have possibly originated from Pulastas (Gk. Pelasgos) though now much mixed. Poligars even not long ago were predatory and warlike. They built walled mountain forts, and they were armed with axe, bows and poisoned arrows. Like all ancient Caspians they practised fraternal polyandry. Tirupathi was their sacred shrine. Minos (Cretans) were called Termilae (= *Tamils*, Herod. 1, 173: Trmmili = Dramil = Drāvīda) by the Lycians and Carians, and they had their names after their mothers. At Mohenjo-daro Mediterranean crania have been found (Rāvana = Tam. iraivan = king).

Yadus (Yutiyas) were Alpines. The Alpines discovered bronze through which they advanced their conquests. They are democratic in their habits, gay and social. They are frugal, and methodical. **Yādavam Janam** are the Yadu tribes (8, 6, 48). Yadu and Turvasa came over stormy waters (5, 31, 8), but the Maruts were favourable (8, 7, 18). Turvasas and Yadus were defeated by Atithigva Divodāsa (7, 19, 8). A hundred presents from Tirindira (an Iranian name: Vrisni Viloman was known as Tri-indra Tittiri or Tartar = Tatar to whom we owe Taittiriya Samhitā, Brahmana and Upanishad) and a thousand from Parsu (Parsa = Persian) have I gained (8, 6, 46).—*Punarvatsa Kāvya*. "Kukuhā (Andhaka Kukura of 1400 B. C.) has advanced the fame of Yādava Janas by making presents of ushtrān (camels) yoked in four (8, 7, 48)." At Hariyupā (Harappā), the vanguard

of the Vrichivans (Vrignivants—Yādava) were attacked and the rear fled frightened (6, 27, 5). Three thousand mailed Vrichivans eager for fame, on the Yavyavati (Zhob) O highly praiseworthy Indra, before the arrows, like bursting vessels, went to their destruction (6). Turvasas were made prisoners by Srinjaya (of North Pancāla dynasty, 14, 20 B. C. Zaranka of Darius; Sarangos of Hero. 2, 93; Drangian near Saistan) and Vricivats to Daivavāta (Abhayāvartin Chāyamāna : 7); O Agni, two wagon-loads of damsels (vadhū=slave girls), twenty oxen the liberal emperor (samrāt) Abhayavarti Chāyamāna has given me. This magnanimity of the Parthavans (Iran. Parthava : Gk. Parthyaei—Parthian) is hard to beat (6, 27, 8) :—*Bharadvāja*. "Thou slewest Tugra (Turgans=Turks) and Vetasu (Vidasa=mixed Palae-Alpines) and made Tuji (Thatagu—Satagydae of Kabul region; Tajiks of the Oxus basin, Iran and Afghanistan : Tocharians) strong who praised thee O Indra (6, 26, 4). "Thou (Indra) hast killed Karanjas (Kanjars) and Parnayas (Parni=a Saka Parthian tribe : Perna leave wearers in the girdle; two allied vagrant tribes in the Punjab) in victorious marches (vartani) of Atithigva Divodāsa (1460 B.C.). Thou hast destroyed a hundred Vangrida's (Zaranka) settlements which resisted the sieges of Rijisvan, son of Vidathin Bharadvāja, the Puru king (1, 53, 8)". "Thou, heroically bent, hast scattered the Pipru (Babylonian) settlements, and helped Rijisvan when the robbers were struck dead (1, 51, 5). Kanita Prithusravas (1, 116, 21), a Yādava, son of Sasabindu, gave valuable presents to Vasa Asvya Pani. (Gk. Phoinix; Lat. Punicus = Phoenician) (8, 46, 21) realizes higher prices for goods of lower value, and when provoked he is very powerful (5, 34, 7). Pani is wealthy, but makes no sacrifices; he is sometimes plundered and killed (4, 25, 7). Pani lives on water; his wealth incites even the law-abiding (rita-jāta) to rob the Pani of his wealth (6, 12, 3). Destroy in us the mentality of Pani (3, 58, 2). Indra is asked not to be a bargain hunter like Pani (1, 33, 3). Pani is a trader (Vipanyan : 1, 180, 7). From the wealth of the Panis, *paniyas* means *majestic* (1, 57, 3; 1, 29, 2), and *panya* means *trade* (8, 32, 18). Indra is called *vanija*, a trader (Av. 3, 15, 1). Is *vanija* a variation of Pani whose profession was trading? "Kill, O Indra, Pisacim (Pisacam : √ Pis—to glow; pinj—to dye; *Pisaca*—

brunet. Gk. *poi-kilos* = variegated. Lat. *pingere* = to paint. Eng. pigment) armed with bronze lances (*pisanga* = golden coloured = bronze; *bhristu* = pointed instrument: 1, 33, 5). *Pisāca* means golden-coloured, i. e., brunet. *Pisāca* Dynasty led by *Yasakara* ruled Kashmir for a long time. *Pashai* (a variation of *Pisacha*, spoken in Laghman of Afghanistan), *Kafir* (in *Kafiristan*), *Khovar* of *Chitral* and *Shina* of *Gilgit* are *Pisāca* languages, and the peoples are mixed Alpines. And *Shina* is the basis of the *Kashmiri* languages. And in northern Kashmir the peoples are dominantly Alpines, among whom the *Dards* still speak *Pisacha* language. *Vaisya* (x. 90, 8) is the *Bessi* tribe that lived on the Black Sea. *Bessarabia* has been named after this powerful tribe. *Ukraine* is mostly inhabited by them. *Bessi* is an Alpine tribe. *Nabhanedista* established the *Vaisya Visala* (Buddhist *Vaisāli*) dynasty in *Tirhoot*. *Vaisya* seems to have nothing in common with *vis* (8, 35, 18) which is a community settlement. *Vis* is *Avestan vis*; Lat. *vicus*; O. Sl. *vise*; Lith. *wiesz*; Goth. *veiha*; Gk. (f) *oikos* = dwelling. Lat. *vicinus*, Fr. *voisin* means neighbour. Skt. *vic* = to enter, *vesa* = an entrance, a dwelling; Lat. *uicus* = village; Goth. *veihs* = village. Skt. *vas* = to dwell; *vastu*, *vasati* = dwelling place. Lat. *uerva* = a home-born slave. *Vispati* (1, 31, 11), lord of the community. *Vispatni* (3, 29, 1) = house-mistress = matron. *Kshatriya* is falsely claimed by many (7, 104, 13). *Kshatram* (8, 35, 17) is a fighting man. *Khatti-Mitanni Mariannu* is a fighting nobility. *Marya* (2, 10, 5; 10, 27, 1) is a hero and a gallant. Lat. *maris*, = male; Lat. *maritus*, lover; Fr. *mari* = husband; Lat. *maritare*, Fr. *marier* = to marry. *Maryadā* = one fighting heroically for the protection of boundary. *Avestan merak* is a fighter and lover; Possibly *marya* had some relation with the war god *Marutta* — Amorite *Martu*, Roman *Martis* — the planet *Mars*. √*mar* = to shine as *Marichi*. Lat. *mare*, Gk. *plem-myra* (see waves), Lith. *mares*, Russ. *more*, Ger. *meer*, Fr. *mer* = sea. Goth. *marei*, As. *mere*, Ir. *muir* = lake. As. *mar*, Ice. *mor*, D. *moer* = moor, wasteland; Skt. *maru* = desert. Ice. *moerr*, D. *mear*, ME. *meer* = boderland, Skt. *maryadā* = boundary. *Khshathra* is used in the *Gāthās* (*Yasna* 19, 11) in the sense of kingdom; *khshathra-vairya* as martial might (*Yasna* 16, 3). *Kshatriya* is the *Khatti*. *Khatti* is likely to be the Kelt, *Catti* of Germany, Roman *Galli* (Gauls).

and Celtic *Gael*. Vitihavya (Pur. Vitihotra) belongs to Haihaya Talajanga tribe. Vitihotras conquered Midland and were the rulers of Baranasi. The Kāsi (Kassite) king Haryasva revolted. But he was killed. Haryasva's son Sudeva drove the Vitihotras. Bharadvajas were the priests of Vitihotras (6, 15, 8).

About 2635 B. C. the powerful Caspian ruler Sargon of Agade undertook a campaign against *Puru-skkhanda* (*Puru-khanda*—*Puru's* share) in Asia Minor. Sargon's successor, possibly grandson, Naramsin in 25th century B.C. fought a victorious battle against a coalition of 17 kings which included *Pamba*, king of *Khatti*, *Zipani* king of *Kanesh* (*Kultepe* on the *Halys*) and *Khuvaruvash*, king of *Amurru* (*Amara*) in Southern Syria. Naramsin had also to defend his empire from the attacks of *Umman Manda* which came from the north. *Manda* (*Marunda*) is a Cimmerian (Caspian) tribe who came from the Caucasus Mounts, settled in Armenian region, for which it was called *Mada* (*Media*). From *Purush-Khanda* ruler *Labarna* the territory is now called *Lebanon*. An allied tribe *Luites* were settled in the southern coastal region—*Arzava* (*Arya*) *Luya* (*Cilica*). *Carchemish* (*Iacrabis*) on the Middle *Euphrates*, a strategic place of importance against *Egypt* and *Babylonia* became the *Khatti* capital about 2000 B.C. and remained their military centre for two centuries. The city is known in the Bible (11 Chron. 35, 20) and in Babylonian records as *Karkamishu* or *Kargamis*. In the *Khatti* capital's main street, a slab-bordered avenue, led into a square from which between slab-built walls, stone steps ascended to the rubble-street foundation of the Hittite kings. Two stone blocks inscribed with the Hittite characters formed their cookstove, while over their doorway stood a slab carved with a winged orb, the crescent outlined within its full disc. The main street slabs in basreliefs alternately black (basalt) and white (limestone) might be described as a triumphal entry series. They display a strange procession of long robed priests, soldiers, musicians and slaves. The slaves, clad in a kind of Highland kilt, bore sacrificial kids. And the Hittite infantry, armed with spear, circular shield and conical casque, wore foot-gear with tip-tilted toes. Turn in the street shows a second series of slab-basreliefs. Here are lions, rampant lions

with eagle heads and wings, eagle headed and leopard-headed deities, double headed eagles (Hindu *Bherunda*) and a bicephalus sphinx combining the cranium of man and lion (Nara-simha). Slabs in the adjacent palace wall show war chariots drawn by spirited horses, bearing kings with drawn bows. This proves that by 2000 B. C. the horse had appeared in Asia Minor. On nearby pedestal stand two bulls, emerging from a single block of stone which is hollowed between their backs so as to form a sacrificial altar. Opposite two opposite bulls hold aloft between them something which resemble a lotus bud (N. G. M. Dec. 1926). Abraham found Hittite established in Canaan where the patriarch, being newly widowed and a stranger in the land, was presented with a burial plot (Gen. 23, 2, 7). Esau married two Hittite women, and the domestic complication of a Jewish mother-in-law with two haughty daughters-in-law of the ruling race is amusingly disclosed (Gen. 2, 7). The Puru Khattis were Alpines with prominent aquiline nose, forming one straight line with their sloping forehead. They had stout frame, tall stature, broad shoulders and arrogant countenance. Hittite, Mitanni and Kassite names are Aryan in structure. **Hittite** (1400—1200 B. C.) : Endarva = Indra + Arva or urva (to hurt) = dreadful Indra (a minister of Khattusila = Kshatriya Sila); Lupaka (a general = Lopāsa (Gk. alopes) = a Jackal; Summittaras (chief of Kargamish) = Sumitra = a good friend; Abi-mardas (Amurru king) = Abhi (war) + mardha (to tread down) = a conqueror; Vasanna (pavilion in a horse race) = Vāsana = a dwelling; Tapasas (fever) = Tapasa (heat); Ganza (horse fodder) = Ganja (a mart where grain is stored; Suwara (the temple of Teshub) = Svar (heaven, the residence of Indra). **Hykso** Semqen (Biblical Simeon) = Sumahan (very great); Kar = Kara (to act; tax; Ay. army); Apachnan = Apaghnan (destroyer); Bnon = Vanāna = Av. Vanan (victor); Aseth = Vāsita (one who dominates); Kertos = Karti (Kartā = manager); Avaris (the fortress) = āvarana (defence enclosure); Sutekh = Sutej (very mighty = Satikantha); Tauti (a queen) = Tavati (powerful or Tapati). **Mitanni** (1475—1286 B. C.) : capital Wassugganni = belonging to Vāsukis—Usuivis; Maria (a warrior) = marya (a gallant); Sanssatar (Hari king) = Saukshatra, son of Sukshatra (a good ruler); Suttarna (Harri King) = Suta-arna (the son of the tumult of battle); Dasratta =

Dasaratha (having 10 chariots); Mattiuaza = Mati + Ojasas (sprited mind); Dasarti = Dāsārti (enemy of the Dasas; or Dāsārathi, son of Dasaratha); Artasumara (Mitanni king) = Rita smara (remembering Ritas or rites); Artatama (grand father of Dasaratha) = Rita-tama (the most pious); Sarmu = Sarman (protection); wirat (a governor) = Virat (one ruling far and wide : emperor); Indara = Indra; Miitra = Mitra; Nasaatiia = Nasatya (Av. Naonhaipya; Uruwannas Varuna; Hittite Arunas = sea; Teshub = Kesaba. Syrians in Amarna Letters — 1830 B. C.) of possible Mitannian origin: Artamanya of Ziribasani = Ritumanya (respecting rites : Av. artamanya); Arzawiya of Ruhizzi (ārjavya = honest. Av. ārezwa); Birmaza (an Egyptian officer) = Viryavāja (one who has won the prize by his prowess); Biridaswa, chief of Yanuamma = Brihadāsva (a big horse); Biridiya of Megiddo = Vridha (wise, old; Av. bridīya : Bardīya, the younger son of Cyrus); Bisitanu (mentioned in the letter of Amurru chief Abdi Asirta = Vasa-tanu (whose body under his control : Av. Pesō-tanu = vishatanu : whose body is poisoned); Dasru, a Syrian chief = Dasra (an ass : dosru = biter; Gk. daxru = asru = tear); Etagam, ruler of Kunza, son of Sutarma = Eta-gama (swift runner); Indarata chief of Aksapa = Indra + uta (upheld by Indra); Irimayayas a (Pharaoh's messenger : Av. Airime-aspa (Azimaspooli, a Scythian tribe, Herod 3, 116 = quiet horse); Māyarzana = Mayāvarjana (one who has no illusion); Nāmyawaza, son of Sutarna (Pharaoh's governor in Ube = Nāmya Vāja (one whose name is prized or glorious); Rusmānya of Saruna = Ruci-mānya (who respects sentiments); Satiya of Enisosi = Satya (truth); Subandu, a chief in S. Palestine = Subandhu (good friend); Sumitta, an Egyptian officer, = Sumitra (good friend) or Su-Medha (of good understanding); Sutarna (of Musihuna = Suta-arna (son of the tumult of battle) or Su-tarana (a great protector); Sutana, son of Saratum of Akko = Su-tana (a good assistant); Suwardata, a chief of Kelte = Svar-dāta (given by the heaven); Teuwatti, ruler of Lapana = dau + vātta (given by the heaven); Tuzbazu chief of Zilu = Turvasu, a name of the Mediterranean people); Vidya, chief of Askalon = Vidvā (knowledge); Yasdata = Yasa-dāta (given by fame = famous; or Av. Yaza-dāta = given by his sacrifice); Zirdamyasda, an

officer of Namyawaza=Iran. Zrida myazda=Hridayamedhā (wise in the heart); Zitrayara, a Syrian ruler=chitrajāra (pretty lover); Zurasar=sura-sara (divine archer); Zurata=Su-ratha (good charioteer); Amaya=A-māyā (free from delusion); Aksapa, a town in Palestine=Akshapāta (an arena or Akshaya=indestructible); Sunama,=a town in Palestine=Sunāma (well-named). *Kassite* (1756-1170 B. C.): Surias, a name of Samasa=Surya (the sun: sagarakti surias=my redemption by Surias); Marutas, the war god=Maruts; Bugas, god (Nazi bugas protection of Bugas)=Bhaga (Av. Buga; Phryg. Bagaio; Slav. Bogu); Burias, a god=Bhara (supporter; Gk. Bóreas=North wind; Slav. bura=storm, Burna- Burias, the lord of the subjects, name of one Kassite kings; Lith bernas=servant; Sumalia, the name of the goddess=Su-mālya (fit for good garlands); Suqamuna, the name of Nergal,=Su-kāmana (well wisher); Abirattas, the Kassite sixth king (1678 B. C.)=Abhirath (standing on a chariot); kara, the title of king=Kuru; Suzigas=Su-jagat (easily moveable, possibly in connection with chariot). Ariva (Arya) is a common first name of the Khatti-Mitannis.

At Mohenjo-daro a few Alpine crania have been found. And an Alpine statue head and shoulder of man with oval face, short neck, prominent long nose, fleshy constitution, luxurious beard, wearing a fillet to keep in order the combed hair round the head; and a cotton painted shawl round his body. The other statue head is almost similar, but wearing a plaited turban over the head and a heavy knot of hair on the back. At Harappa on one of the seals are depicted the marching procession from left to right of seven men of Alpine type wearing kilts and helmets. The terracotta figures also show brachycephalic head with prominent nose, oval face, short thick neck, fleshy lips; but the eyes are somewhat narrow. At Tell Asmar of about 3000 B. C. vases with cattle and lions have been found. A green steatite vase contains a humped bull. Two statue heads in limestone with shaven face of Alpine type, wearing plaited turban on the head, have been found. There is also a basrelief of a bearded man of an Alpine type on a vase. There are 3 limestone bearded statues of Caspian type with flounced skirts. There are two limestone statues of ladies of Mediterranean type. There are two sculp-

tured heads with hooked nose of Alpine type (Khatti). There are amulets of goose, crocodile (I L. N. Sept. 12/1936).

Druhyu is a Semitic tribe, Druse, Afghan *Durani*, Arabic Druz, a people of mid-Syria. Druse is a mixed Semite, having some Alpine admixture. In Druse religion there are elements of Nature worship. It has been frequently asserted that the image of a calf is kept in a niche and traces of phallic and gynaecocratic worship have been observed among them. In the eastern Hauran, there are hill-top shrines, containing each a black stone (meteorite), and these seem to perpetuate the pre-Islamic Arabian cult, including the sacrifice of animals, particularly goats. Women assemble in the Khālwas on the same time and join the men in religious functions. Divorce may be initiated by the wife (11 E B. Druses).

Triksi (Trāsadasyava), Druhyus and Purus are great fighters (6, 46, 8). The Bhrigus and the Druhyus allied with Turvasas and Matsyas for conquest (7, 18, 6). The Anavas and the Druhyus in the Ten Tribes Confederacy War against the Pancāla Sudās (1400 B. C.) lost 6666 persons as dead (7, 13, 14). The Pakthas (7, 18, 7) in the same war are the Pasthus, a tribe of the Afghans (Pakthas = Pukthan = Pathans). The Pathans like the Semites are tall, slim dolichocephals with prominent occiput, pretty long ellipsoid face, aquiline nose and thick beard. Paktha, Adhrigu (possibly Pur. Arudha) and Babhru (according to Puranas, a descendant of Druhyu), separated from their friends were helped by Asvins (8, 22, 10.) Pakthas were settled between Kubha and Kurmu (7, 18, 7). Babhru helped the Rusamas possibly (Anava) and received from them and their king Rinanchaya four thousand cattle as a present (5, 30, 11-14). Druhyu king Arudha fought against Ikshvaku Yuvanāsva, and his son Gandhara (1, 126, 7) being defeated settled in the northern mountainous country which was named after him (*Vāyu* P. ch. 90, 10). It seems that the Atris (5, 40, 9) who knew how to predict solar eclipses, were mixed Alpines or Caspians. According to traditions, Atri is excluded from the only four original Brahman's clans Angiras, Kāsyapa, Vashishtha and Bhrigu (*Sānti* P. ch. 297, 17). Atrin is a sorcerer (1, 86, 10), doing mischief by his witchcraft. The Magi (Gk. magos. Skt. maga), the priestly tribe

of Media, were noted star-gazers and magicians. Atri might have originated from Median Atar (fire : Shirozah 1, 7), and Media was chiefly the place or Manda or Mada, a Cimmerian tribe. Babhru Atri is a composer (5, 30) and the name suggests some Semitic connection with the Babhru clan.

Purus are Khatti hordes (Purusti : Far Yast 111). Agade Sargon undertook a campaign against *Puru-sh-khanda* (Puru's share) by which Asia Minor, the land of the Khatti, was known. An allied language was Luish (14 E. B. Hittite). Luistan is found in W. Iran. √ par = to advance. Skt. pri = to bring over, parā = far away, puras = before; Gk. poros = a way, porthnos = ferry; Lat. porta = gate, portus = harbour. √ para = to fill; Skt. purna = full, pura = town, puru = exceeding, purusha = man; Gk. polis = city, polas = much. Lat. plere = to fill, planus = full, plus = more, plabes (throng of) people, populus = people. Khatti *pir* = house. Khatti Puru = Kshatriya horde. In Avesta there are names like Pourushaspa (Puru-Asva : Yasna 9, 13 : -Puru has the speed of a horse), Pourucista = Puru-Sistha = chief of the Purus. Yasna 53, 3. Purus spoke a strange language (purusu vidathe mridhra vacam : 7, 18, 13). Aryans have well-developed secondary sexual characters; men are virile, women are graceful. Men are energetic, women are active. Females have pretty hemispherical breasts, broad hips and large ellipsoid pelvis. The society is patriarchal. Shepherds (gopa : 1, 22, 18; I, 96, 8 : Skt. Gopa = village chief. gotha-pati = the head of a clan. S. Slavic *govado* = herd, gospodor = ruler. Aryan root of *go* is *gu* = to low, to sound. Gk. *go* = outcry, lament; *bo* = ox. Lat. *bo* = to shout, *bo* = ox; Fr. boeuf. Ger. Kuh; Av. *gao*; O. Slavic *govedo*). The Aryans were a pastoral people. They were also farmers. Baby. Gudea (2400 B. C.) styled himself as *issakku* (Ikshvaku), meaning an *agriculturist*. Agriculture engenders settled domestic life and fosters family harmony. √ ar = to plough. Gk. *ar* = in, Lat. *ar* = are, Goth. *ar* = jan, As. *er* = ian = to plow. Eng. *arable*, ear of corn. Hence Lat. *ara* = fire-altar. Agriculture means gaining livelihood. Hence *ar* may also mean to gain; Skt. *ara* = spoke of a wheel. Gk. *ar* = menos = fitted; *arthron* = limb; *arthmos* = counting; *ar* = ete = excellence. Lat. *ar* = mus, *ar* = tus = limb; *ar* = s = skill; Goth *ar* = ms = arm. Arya =

aristocrat ; ar = to row ; Skt. ar-itra = rudder ; Gk. er-essein = to row ; er-etmos = an oar ; Lith. ir-ti = to row ; Lat. r-emus = an oar. As. oar, row.

Bharata was the son of Puru Dusyanta. At this time Midland was liberated from the Alpine Haihaya domination as the Vitihotras (Vitihavyas) were driven away by the efforts of Ikshvāku Sagara and under Kāsa Prataradhana. Turvasa and Puru clans became united and made Puru Dusyanta their chief. It is said that Dusyanta was adopted by Turvasu Marutta. Dusyanta married romantically Sakuntalā, the pretty daughter of a Kusika Visvamitra descendant. Their son was Bharata who recovered the Paurava kingdom and extended its territory. After him the whole country was called Bhāratavarsa. Bharat had nine children by three wives. He suspected them to be illegitimate ; or possibly due to court intrigues they retired from military and administrative duties and adopted priesthood. They are the Asvamedha Bhārata, composer of 5, 27 ; Devavāta Bhārata and Devasravas Bhārata 3, 23. Kusika Vesvāmitras became the priests of the Bhāratas. Thus deprived of a successor, Bharata appealed to Alpine Vaisya Vaisali king Narisanta, son of Marutta, to give him an adopted son. Marutta to please his friend and ally gave him Vidathin Bharadvāja, son of Bharadvāja, an illegitimate issue of their priestly family, and who was brought up by Marruttas, as the adopted son of Bharata. Usija had three sons—Samvarta (author of, x, 172), Brihaspati (x, 71—72) and Ucathya (9, 50 ; 52). Brihaspati's son Samyu is the author of 6, 41 ; 46 ; 48. Brihaspati's daughter Romasā is the composer of 1, 126-7. Samvarta became the priest of Vaisali king Marutta. Ucathya's wife was Mamatā. Mamatā had a son Dirghatamas who was known as Māmateya (4, 4, 13). Māmateya Dirghatamas (1, 160. 6) was a great composer and he officiated as the high priest in the adoption ceremony of Vidathin Bharadvāja to Bharata (1700 B. C.) Mamatā seduced by Ucathya's brother Brihaspati, and their illegitimate offspring, being deserted by both the parents, was brought up by Marutta. Bidathin Bharadvāja was the son of Bharadvāja. Bidathin Bharadvāja did not succeed Bharata, but his son Vititha. And his other five sons—Suhotra (composer of 6, 31-32), Sunahotra (6, 33-34),

Nara (6, 35-36), Garga (6, 47) and Rijisvan (6, 49, 52) became Angiras priests. (5, 29, 11). Bharata's successors were **Bharatas** who had Visvāmitras as their priests (3, 53, 12). Nara's son was Narya (1, 112, 9). It is very likely that Dirghatamas was not blind. For a blind man could not officiate as a priest. Moreover Dirghatamas is called a charioteer (sarathi) of surging waters (1, 158, 6), which means he was a navigator. His brother Dirghasravas was a trader (vani) and his son Kakshivan, a great poet (1, 112, 11). Kakshivan praised Bhāvya (a Phoenician) who dwells on the bank of the Sindhu for his presenting to him many valuable gifts (1, 128, 1-5). Kakshivan's daughter Ghoshā Kākshivati is the composer of ×, 39, 46. Ghoshā was married to Arjuna (—white) whom her father secured for her as her husband (1, 122, 5). Other descendants were Kākshivati (×, 169), Sukriti Kākshivati (×, 131). Vititha Bhārata married Sunandā and their son was Bhumanyu. Vaidāthina Rijisvan conquered the settlements of Pipru. (Babylonians) 1, 5, 15), but the Vangrida (Zaranka) resisted (1, 53, 8). Bhumanyu married Vijayā and their son was Suhotra. Suhotra married Ikshvaku princess Suvarnā (Su—excellent, varna= colour : √Var, skt. vri—to cover, surround. varna originally meant covering : var-man—armour. Gk. eir-os=wool (covering). Lat. or-nare—to adorn (cover), uel-lus—fleece. As. wear, ornament), and their son was Hastin (1600 B. C.) who founded Hastinapur. Hastin married Sudevi and they were succeeded by Ajamira (4, 44, 7), Drimira and Purumira (5, 61, 9). Purumira's priest was Syāvasvas Atreya. Syāvasva was also the priest of Taranta and Darbha Rathaviti (5, 61, 9, 19). Taranta's wife was young and ever smiling (Yuvatir maman-dushi=joyous-spirited : 5, 61, 9) and the lovely spouse warms the gentleman (bhadrā jana) with fire (agnitapa : 5, 61, 4). And many a woman is more firm and better than men who lack faith in gods and who know no charity (5, 61, 6).

Ajamira seems to be a mixed Dacian (Divo-dasa ; Sudasa) clan. Assyrian inscriptions mention Azmir peoples in Zagros Range. There is a town Azimir in N. Morocco after a people. Azim is a Semitic name. There is an Azmeri tribe in Abyssynia. Panini in his Ganapatha (4, 1, 173) mentions Ajamira as a tribe in N. India with Salvas and Madras. Ajamira

(4, 44, 6) had three wives—(or rather consisted of 3 clans)—Kesini, Nalini and Dhumini. Through Kesini was born Kanva (✓ *Kan*—to ring, to sing; Kanva=singer, chanter. Chanda—meter. Lat. *cano*—to chant, *Can-ere*=to sing Gk. *Kan-ake*=ringing sound. As. *han-a*=a cock (singer). Eng. chant, canto). Kanva's (1, 14, 2; 1, 39, 9) son was Medhātithi (8, 8, 20). Kanva Medātithi adopted priesthood to avoid succession contests. Eighth Mandala of the Rigveda is mostly the composition of Kanva Medātithi's family. Through Dhumini Ajamira had a son, Brihadvasu, the founder of South Pancala Dynasty whose descendants Brahmādattas of Jatakas ruled Kāsi in 7th century B.C. Ajamira (100 B.C.) through Nalini had Nila, the founder of the famous North Pāncāla Dynasty, the heroic deeds and magnanimity of whose kings are mentioned predominantly in the Rigvedic chants. This has given a reliable basis of the chronological evaluation of the Rigvedic Rishis and their hymns. Nila's son was Susānti. Susānti's son was Purujanu (Rv. Purushanti: 9, 58, 3). His son Riksha. Riksha had five sons—Mudgala, Srinjaya, Brihadishu, Yavinara and Kāmpilya, and after these five brothers, the territory was known as Pāncāla. Mudgala's eldest son Brahmistha succeeded his father to the Panchala throne. Other sons of Mudgala and their descendants adopted priesthood and were known as Kautha Maudgalya Brahmins and affiliated themselves to Angirasas. Brahmistha's son was Vadhryasva. Vadhryasva worshipped Sarasvati (6, 61, 1 possibly lived on her banks). Though he supported his clans (x, 69, 9), he fought valiantly against the enemies as well as against his kinsmen (x, 69, 12). Vadhryasva married Menakā and they had a son Divodāsa who wiped out his father's debts to Panis by killing them (6, 61, 1). Their daughter Ahalyā was married to Angirasa Saradvant Gautama; their son was Satananda who became the priest of Siradvaja Janaka (Ram. 1, 50, 6). Saradvant Gautama divorced his wife Ahalyā for her loose morals, especially for her adultery with one Indra. But as Rama, the crown-prince of Ayodhya honoured her by receiving her hospitality, she being the sister of his father's friend and ally Athithigra Divodāsa, she was taken back by her husband. Their descendants are Satyadhri, an archer, Kripa and Kripī, married to Drona; their son, Asvathamān.

Divodās in alliance with Dasaratha defeated Sambara (Cimbri), Yadus (Alpines) and Turvasus 9, 61, 2). Atithigya Divodāsa crushed Vetasu (Veta, an outcaste tribe found in Kangra and Kulu of mixed* Caspian origin) and Tugra (Tugrans=Turks) with the help and benefit of Tuji (Tajiks). Sambara, Gunjus (Gunjial or Kanju an agricultural tribe in Shahapur) were crushed (6, 26, 4). Divodāsa overthrew Karanja (Kanjār, a vagrant tribe in the Punjab) and Parni a Saka Parthian tribe); Parnaya (Perna, called perhaps for leaf-wearing in their girdle, a vagrant tribe of the Punjab), and dispossessed them of their land (x, 48, 8). Divodās's son was Indrota (8, 68, 10). Mitrayu Divodāsa (bright Dacian) fought Brishaya (Epthalite Barsileens, a Saka tribe Basilees—Skt. Vrishala : 6, 61, 1). Indrota Mitrayu's son was Maitreya Somaka. His eldest son Srinjaya (4, 15, 4 : Ir. Zarank; Sarangos) succeeded him. In a battle on the river Hariyupiyā (Hariob) Parthava (Parthian) Abbayāvartin Chāyaman overthrew the Varasikha (a Caspian clan) and defeated the vanguard of the Vrichivans (Vrijivants) and their rear fled frightened. On the Yavyāvati (Zhob) three thousand mailed Vrichivans went to their destruction, before their arrows like bursting vessels. Turvasas were taken prisoners by Srinjaya, and Vrichivans by the Parthava (Prithus and Parsus together : 7, 8, 3; Parthians and Persians). Dairavata Abhaya Vartin Chāyamāna gave Bharadvaja two wagon loads of damsels and twenty oxen (6, 27, 5-8). Srinjaya's son was Cyavana Pancajana (Cyavana : x, 69, 5, 6). Sudās son of Pijavana; (7, 18, 23) extended his dominion over South Panchāla and Dirmira territories. Other sons of Srinjaya became Srinjaya Brahmins. Famous Sudās (good Dacian) was the son of Cyavana Pijavana. Sudās, known also as Mand-galya, married Indrasenā, the heroic and romantic daughter of Nala and Damayanti (MBh 1, 212, 4) and thereby secured the military aid of Southern Kosalas of which Nala was the king and of the Vidarbhas (Alpines) of whom the Damayanti was the princess. After Ikshvaku Dāsarathi Rama's death Ayodhya kingdom was spilt up into two. The Northern part was ruled by Lava, possibly Rāma's son, with Sravasti as his capital. Lava's great grandson was Rituparna, friend of Nala.

Kusa (possibly the Kassites) occupied southern parts with Kusasthali in the Vindhya Hills as the capital (Vayu P. ch 88). Kusa's son was Atithi; his son Nishada whose son was Nala. Nala's daughter was Indrasenā (M Bh 3, 57) who was married to Maudgalya Sudās. Indrasenā was a good charioteer and took parts in daring raids and cattle lifting. "When Mudgālini (the queen of the Maudgalyas) became a charioteer and conquered many, her dress was agitated by the wind. Indrasenā entered into enemy's camp and brought many cattle, herself remaining the charioteer (x, 102, 2). Though thus forsaken (she accomplished it alone), she joined her husband with proud swollen breasts (x, 102, 11). To offer resistance to Sudās's aggressive imperialism many tribes made a joint effort and fought against Sudās and his Puru ally Tritsu who had a Visvāmitra descendant as their priest. The confederacy consisted of (1) Simyu (Simeon—an Israelite tribe. Simeon and his brother Levi massacred the males of Shechem to avenge the violation of their sister Dinah by Shechem. Their father Jacob condemned their ferocity and cursed them to be scattered (*Gen.* 34—44). It may be conjectured that Dinah represents Dana (Dānava=Caspian) tribe and it was supported by Simeon tribe against the aggression of the Canaanites (also Cimmerii Caspians) who drove them out between 15 to 13 century B. C.; mixed Semite); (2) Turvasa and (3) Matsya (Mediterraneans); (4) Bhrigus (Bryges=Phryge=Casp. Phrygians); (5) Druhyus (Druses: Durani Semites); (6) Pakthas (Pakthan—Pathan=Semites); (7) Bhalanas (Bhalikas: Sakas: mixed Caspians); (8) Alinas (Palae Alpine tribe: Amils of Sind—Lohanas—Chinese Loi); (9) Sivas (Ausinara Sibi—Palae Alpines); (10) Vishānins (Bisnoi tribe in Bikaner and Jodhpur: mixed Mongoloid Palae-Alpines); (11) Vaikarna (Vehrkana Fargs. 1, 12; Varkāna of Darius; Hyrcanians of the Greeks in Astarabad: Caspians); (12) Kavasha (Ailusha, a Sudra tribe: Chudes: (13) Anu (Palae-Alpine); (14) Puru (Sambarana: Khatti=Kelt); (15) Bheda (Veddah); (16) Ajas (possibly the Ikshvaku clan, named after Aja, father of Dasaratha; 1475 B. C. There is also a West African Aja Negro tribe with Ewe speech); (17) Sigrus (a Mongoloid tribe living in upper Indus in Baltistan where a tributary of the

Indus is named after them as Shigar, and there is a locality called Shigri); (18) Yakshus (a Tajik tribe); (19) Sambara Cimbri: Monkhmer; Sabara:—7, 18, 5-20). This confederacy war took place about 1375 B. C. Vasishthas were the priests of the confederates and Visvāmitras of Sudās (good Dacian—Dahae) and his ally Tritsu (8, 33, 12). And before the confederates could unite, Sudās struck at his enemies one by one and scattered them like autumn leaves. At first the confederates were successful. Finding this unfavourable turn of war, Visvāmitras found it opportune to desert Sudās and take the sides of the enemies. Vasishthas in their turn became the priests of Sudās who was successful to cross the Parushni (Ravi). But Simyus (1, 100, 18) however trying to cross it got themselves drowned in its rapids (7, 18, 5). Turvasas, Matsyas, Yakshus, Bhrigus: Druhyus, Pakthas (Semites), Bhalanas, Alinas, Sivas and Vishanins however united (7, 18, 6-7). In order to make the Parushni fordable, they dug a channel and erected a dam, but the dam burst while the confederates were trying to cross it and many of them got themselves drowned. Even the swiftest could not escape (7, 13, 8, 9). Then the remaining Vaikarnas (Varkāna Caspians) were scattered as easily as grass is cut (7, 18, 11). Kavashaś (composer of x, 33) and Druhyus were drowned (7, 18, 12). Anava's possessions were given to Tritsus. But the Purus escaped (7, 13, 13). Anavas and Druhyus seeking victory lost more than 6000 men (7, 18, 14). Sudās got all their possessions (7, 18, 17). Then even the fierce Bheda (Veddah) submitted, but they were deprived of all their possessions on the Yamunā. Ajas (Ikshvakus), Sigrus (Sigris in upper Indus: mixed Mongoloids) and Yakshus (Tajiks) brought tributes of horses. Sambaras (Cimbri) lost their settlements (7, 18, 18-20). And Sudās in gratitude of victory gave 200 cattle and two chariots yoked with horses to draw them to Vasishtha, his son Satyatu (Sakti) and his son Parasara (7, 18, 21-22), borne by Sakti's widow Adrisanti. For many years the Paurava king Samvarana took refuge on the Sindhu. But with the aid of Kamboja Kurus and Sakti Vasishthas he secured partly the Paurava kingdom and Tapati Vaivasvati (Mediterranean) as his wife. But the Pancāla power began to decline after Sudās, though Sudasa's

son Sahadeva and Sahadeva's son Somaka are praised (4, 15, 8) for their generous gifts by Vāmadevas.

In the main branch of the Puru line there was a petty chief Durgaha. The aggression of the Pāncālas shrunk the dominion of the main Purus. Duagaha lived about 1500 B. C. contemporary of Pāncāla Bhrimyasva, father of Mudgala. Durgaha's son was Girikshit. Purukutsa was made a prisoner. Atithigva Divodāsa and Trasadasyu (terror to the Dāsas) were contemporaries and allies (1, 112, 14; 7, 19, 3). He was also the friend and ally of Ajeya Dasaratha of Ayodhyā who fought jointly against the Sambaras (*Ram* 2, 9, 11-18). Purukutsa's son Trasadasyu gave Sebhari Kanva a gift of fifty damsels (1, 19, 56). Syavasva Atreya also became the priest of Trasadasyu (8, 36, 7). Trasadasyu was contemporary with another Puru chief Asvamedha. Parsavah (8, 6, 47: Parsa is Khatti Puru clan after whom Fars and Persia have been named. Here Parsu, Parsa, and Yadavas—Yutiyas are found together, Behi 3, 40) were harassing *Kuru-sravana* of Kāmboja descent who was suffering privations and exhaustion (x, 33, 2-4). Trikshi became powerful (8, 22, 7). Pāncāla Divodāsa's son (1462 B. C.) Indrota, Asvamedha's son Putakratu and Riksha's son were contemporaries (8, 57 (68). 15-17). and these Pauravas made generous gifts to Prioyamedha. Putakratu's son Dasyave-vrika (wolf to the Dāsas) gave Praskanva a hundred asses, a hundred fleecy sheep and a hundred slaves: 8, 55 (V 8, 8). Kuru Ristisena (1125 B. C.) had two sons—Devapi Ristisena and Santanu. Santanu became the king. But there was a drought. And Devapi made a yajna (√ yaj—to sacrifice, worship; Gk. ag-ios, ag-nos=holy; Av. yasna) to secure rain (x, 93, 3, 7-8).

Triksa's descendant was Samvarana who was defeated by Sudāsa (1385 B. C.) and who returned to the Sindhu. But it is said through Sakti Vasishtha's aid he recovered his Paurava kingdom and Vaivasvati Tapati as his wife. Perhaps Samvarana and Vasisthas aided the conquest of the Kurus and Krivis. Samvarana's successors were Kurus. Kurus were great conquerors. They forced their way through the Punjab, overthrew the kingdom of the Pāncālas and their kingdom extended to Karukshetra and later to Prayāg. The allied tribe of Kurus, Krivi, became powerful (8, 22, 12). But it was harassed (8, 20, 24) and

overthrown (8, 51 (V. 3), 8), possibly by the Kurus. Kuru is a tribal name otherwise there would have been no name like *Kurusravana* (glory to the Kurus) who was harassed by the Parsas (Parsis : x, 32, 2-4). Cyrus (558-529 B.C.), the founder of the Persian empire, was called Kurush, Gk. Kuros, Baby. Kurash, Heb. Koresh, Lat. Cyrus (14 E.B. Cyrus). Cyrus was the father and son of Cambyses (Iran. Kambujiya = Kambojas of Rājapuram (MBh. 7, 4, 5; S. W. of Punach). Kamboja, a Saka tribe, possibly mixed which with other Caspian clans through Tibet, settled in Mekong Valley, known after them as Cambodia (Malay *Kamboja*). Uttarakuru is the Trans-Himalayan and Trans-Caspian region, an early settlement of the Kurus. Karakaram might mean obstruction (kāra, kāra-griha = prison) to the Kurus, as Karpathian Mts (Ger. Karpathan, Gk. karpates). In Ganapātha (4, 2, 133), Gandhāra, Kamboja, Kasmira, Malva and Kuru tribes are put together. √ kar = rough. Skt. kar-kar-a = hard, kar-anka = hard shell = skull; Gk. kar-on = a nut, ker-as = a horn, kar-k-inos = crab; Lat. car-ina = nut-shell, car-nu = a horn, can-cer = a crab. Kuru might have originated from √ kar or kal = to move, speed, run. Skt. car, cal = to move; car-ana = feet; kal = to impel, kal-aha = quarrel; Gk. bo-kol-as = a cattle-driver, kel-as = a racer, kol os = axis (of revolution); Lat. cur-rare = to run, karr = cart. Or Kuru has originated from √ kar = to make; Skt. kri = to make, karman = work, action; Gk. kr-enein = to complete, kre-on = ruler; Lat. cre-are = to create. The *dynasty* of Cyrus was called H(s)aka-manusya (O Ir. hakhāmani = Achaemenidae = of Saka descent). Darius in his Susa palace inscription called himself a Parsa — of Puru Khatti origin; and some where else as an Airya. It seems therefore that the Achaemenidae were mixed Saka Kuru Kambojas with Alpine Khatti Purus (who became known as Parsa) and some Aryan stocks like Luites, Mitannis and others. In Mamaseni region in Fars 50 rock sculptures show regular Khatti type and features as in all later basreliefs of the Achaemenides (but without the pigtail and up-turned toed shaes). At Persepolis a monumental basrelief of 489 B. C. has been unearthed. Darius (Darayavau = Skt. Dharayavasu = prosperous) is seated in a flowing robe on a beautiful wrought chair, his sandled feet

resting on a pedestal, holding in his right hand a sceptre and in the other a blossomed lotus. Behind Darius is his son Xerxes (*Kshatri arsha* = glory of the Khatri or Khattis) in a standing posture in a flowing robe. And behind Xerxes stands possibly the food taster. And behind them the bearer of the royal bow, sword and mace and two body guards. Two incense burners are carven in front of Darius. A noble petitioner, robed in pajamas and a shirt bows before Darius, his right hand at his mouth in a gesture of respect and appeal and the left hand holding a sword. Behind the petitioner are his lance-bearer and his companion, the latter carrying a metal globular receptacle. They have broad head, oval face, but with high bridged equiline nose, rich curled beard and bobbed hair falling behind their caps on their head. The scabbord of the sword, hanging from the waist band of the bearer of the royal bow, is decorated with lotus blossoms, griffins, ibexes and a ram's head (I. L. N. Aug. 22, 1936). Darius calls himself a Parsa—adam Parsa (Darius inscription on the ancient Suez canal—*La stelle de Chaloup*). Parsa = Parsu (8, 6, 48, Parsava (1, 105, 8). Kuru married Yādavi (Alpine) Subhāngi and they had five sons of which Sudhanvan Jahnu and Parikshita are important. Kuru's descendants are known as Kauravas. Parikshita ascended the throne. His son was Janamenjaya. His son Bhimasena. Bhimasena was conquered by Suratha, grandson of Jahnu. Descendants of Jahnu are known as Jahnavi (1, 116, 19; 3, 58, 6). Jahnu's daughter was called Jahnavi; after her for the Gangā. Thus Kuru kingdom went to Suratha's son Viduratha and his descendants. Sudhanvan's son was Suhotra. Suhotra's son was Cyavana. Cyavana's son was Krita. Krita's son Visruta. Visruta's son Vasu. Vasu (1250 B.C.) conquered the Yadava kingdom Cedi. It is said that about 1750 B. C. Yādava Jayamagha captured a girl before the birth of his son Vidarbha (Berar), and Vidharva was married to her though much older than himself. And they had three sons—Kratha Bhima, Kaisika and Lompada. Kaisika's son was Cedi who founded the Chedi dynasty. Vasu gave his son Kusa the kingdom of Chedi. Kasu Caidya, Cedaya (8, 5, 37-39) are praised for their generosity by Brahmatithi Kanva. It is very likely that the later Chedi kings are praised, for in the Yādava Cedi time, Kanva did not come into existence. Vasu's

eldest son Brihadratha became the founder of the famous Magadha dynasty. Navavāstra Brihadratha (10, 49, 6) killed the Dāsas easily (1, 36, 18). Thus in Puru Line, we find 3 racial stocks, ruling successively. **Purus** (Khatti : Kelts) were overthrown by **Ajamiras**, possibly of Caspian Dacian (Dāsa = Dahe) origin ; and they in turn by *Kurus*.

Ikshvāku (×. 60, 4) is Gk. Akaios, Lat. Achoea, Eng. Achean, Khatti Ahkhiyawa, Egypt. Akhaivasha, Baby. Issaku of Gudea, Ger. Ingovones. Achaeans prided to call themselves as *sackers cities*, Vedic *Purandara*, an epithet of Indra. From the Valdai plateau where the Aryans originated, Ikshvāku through the Volga basin, Merv (Meru), Oxus (Akshu) and Kailāsa Mounts (Pamirs) through the Sarayu defile reached Ayodhyā. From the Pamirs they reached the lower Sarayu through its upper gorges, known in ancient times as Ikshumati, and at present as the Kāli which is also the pilgrims' route to Kailāsa peaks and Manosaravar Lakes. Just below the junction of the upper affluents of the Oxus, the Pamir River and Aksu (Murghab : Aksu and Oxus are corrupt forms of Ikshvaku), there is a very ancient settlement, the remains of a stone encampments and now a fort at Ishkashim at the elevation of 8560 feet. Ishkashim also betrays its Ikshvaku origin. There are still agriculturists at the lower Oxus region at the elevation of 7000 feet. Here the Tajiks with Aryan features (Tuji = Tocharians - Takshaka Nagas) cultivate land and fruits. In Surkhab (Waksh = Ikshvaku) and in Darwoz valleys the summer is delightful and enjoys Alpine scenery. Here maple, ash, pistacio, junifer grow freely in mountain forests ; wild vines and pomegranates are found. Beet root and kohlrabi and other vegetables, barley and wheat are widely cultivated. The sunflower decorates every village garden. The houses are generally two storied and built of stone with straw roof. Every house possesses its staircase, its well and cisterns for irrigation. The Aryan Tajiks of this northern section seem to be well provided with most of the comforts, if not the luxuries of life (11 E.B. Oxus). Some of the Tajiks and Uzbek people in the Oxus basin at Ishkashim, in Wakhan valley, show fine dolichocephalic feature with blue eyes. Through the Wakham valley lies the easiest approach to Pamir. Comparatively easy passes, used

throughout the year by the Kirghiz (Alpine Khazars) and others, lead southwards across the Hindukush to Chitral and Kunjud, that is to the upper Indus basin. This route has further the immense advantage over those of Turkestan and Persia that it nearly everywhere traverses cultivated and inhabited lands and avoids the great waterless deserts (*Elisee Reclus*—*Asiatic Russia* P. 238). Through the Dauligiri Pass one can easily enter into Nepal. Through the Kali Gandak defiles many Nepalese and Tibetans for trading purposes easily enter into Tibetan plateau or descend into Nepal, as Sven Hedin did it himself. And Sven Hedin says that by means of a canal cut through Kerala (15,292 ft.) the Brahmaputra (Tsangpo) might be turned into the Ganges, thus swelling its volume (Sven Hedin—*Trans Himalaya*, Ch. 41, vol. II. P. 79). Ikshvaku might have been derived from $\sqrt{\text{ak}}$ = to pierce, to be sharp, to be quick. Skt. as = to pervade, to attain; asva = a (swift) horse. Gk. ak-ros = pointed, ak-on = javelin, ip-pos = horse. Lat. ac-us = needle, eq-uus = horse. $\sqrt{\text{ak}}$ = to see. Skt. ak-sha = eye; ik-sh = to see, Gk. ops-is = sight, oph-thalmos = eye. Lat. oc-ulus = eye. Russ. ok-o = eye; Goth. aug-o = eye. $\sqrt{\text{vak}}$ = to cry out, speak Skt. vas = to cry (animal's), vac = to speak, vaca-s , vākya = speech. Gk. ek o = echo. Lat. vox = voice. So Ikshvaku might mean a quick or sharp-speaker—thunderer, or speaker with vision. It may be the Avestan Akayadha (Farv. Yast, 127). Vasishtas (Vahistahe. Farv. Yast 111 = excellent holiness; Vahistoisti Gatha; Vazista fire; Farg. 19, 38-40) were the priests of the Ikshvakus. Vasishta was a fire priest. Seventh Mandala of Rigveda is the composition of the Vasishtas. **Mandhatara** (Māndhatar) was *Kshaitra-pati*, lord of lands (1, 112, 15). Māndhātār is the leader in making sacrifices to Agni (8, 39, 8). "We have sung anew praise to Indra-Agni, as sung our ancestors (Pitṛivas). Angirāsas and Māndhatar (8, 40, 12). This indicates that Māndhatar lived long before the poet, a Kanva. Mandhatar was the son of Yuvanasva and lived about 1762 B.C. Māndhatar married Vindumati, the eldest daughter of Yādava Sasavindu, son of Chitraratha. Māndhatri with Vindumati had three sons—Purukutsa, Ambarisa and Mucukundu. Māndhatar was adventurous and enterprising. Māndhatar with his valiant sons, and possibly also with the alliance of the Yādavas overran Kānyakubja and dismembered Puru

kingdom and then extended his conquest up to Narmadā where in alliance with Karkata Nāgas (Vishnu P. 4, 8, 6-12), defeated the Haihaya king Sahanja, captured their fortified town Mahismati on the rocky island on the Narmadā, and renamed it Māndhātā or Onkāranātha, a great pilgrimage centre. Māndhātār's son was called Purukutsa, (6, 20, 10) for he brought disgrace (kuts=Lith. kussinu=revile. √ kat. cat, catta (x, 155, 1)=frighten away. Gk. kot-yle=a hollow. Goth. heth-jo=a place of shelter) to the Purus whose kingdom was overthrown. Ambarisha is mentioned (1,100,17) but there is no certainty whether it was this Ikshvāku. There was another Ambarisha, son of Nābhaga (1675 B.C.). One Nabhāka (8, 40, 5; 8, 41, 2) is called a man of olden days, it is likely it is the Puranic Ikshvāku Nābhaga. Purukutsa married a Haihaya princess Narmadā who became the mother of Trasadasyu. Trasadasyu made some grants of lands to the Purus (4, 38, 1). Trasadasyu's descendant Trivrishan's (Tridhanvan's) son is Tryaruna (Trayyārūna: 5, 27, 1-3). At this time there was a war of succession in Ayodhyā. Taking advantage of this Karkata Nāgas (Caspians) became independent and they occupied Mahismati on the Narmada. But the Haihaya king Kritavirya (√ Kar. Skt. kri=to make, kar-man=action, krita-work done. Gk. kre-on=ruler; Lat. cre-are=to create. Lat. vir., uir=man; viri-lis, uiri-les=virility. Gk. eros=hero. Avestan vira=a hero; Skt. vira=hero; virya=semen, energy: Krita-Virya=executive power) Arjuna (1837 B. C.) captured Mahismati from Caspian Karkata Nāgas (MBH 8, 144) and advancing over the prostrate Paurava kingdom attacked Kānyakubja and raided Ayodhyā. Jamadagni (3, 62, 18: Jamadagnis 3, 52, 16), brother-in-law of Kānyakubja ruler Visvaratha (Visvāmītra), a renowned archer, was killed by Arjuna's (=white) sons. Bhrigu (Phrygian) Jamadagni's son Rāma (x, 93, 4—Rāma Asura. Parasu Rāma for he always carried with him a double-bladed axe—Parasu; Gk. pelekus, Assyrian *pillaku*, which was the sacred battle-axe of the Mycenaeans, perhaps of all the Caspians) killed with his axe Kritavirya Arjuna. Visvaratha, Kānyakubja king, son and successor of Kausika Gādhi (Kassite), finding resistance useless, adopted priesthood under the name of Visvāmītra. Protracted war and devastating raids by the Haihayas caused friction between Trayyārūna and

his son Satyavrata Trisanku. Trisanku was married to a Vidarbha (Alpine) princess. So he advocated reconciliation with the Haihayas. Trayyārūna at the instigation of his priest Devarāj Vasistha banished his son Satyavrata. Visvāmītra helped Satyavrata to regain the Ayodhyā throne, overcoming the opposition of Devarāj Vasistha and became the priest-minister. On Satyavrata Trisanku's death his son Harischandra was put on the Ayodhyā throne by Visvāmītra. But Harischandra soon after dispensed with the service of Visvāmītra. Through revolts engendered by Visvāmītra, Harischandra not only lost the throne, but he had to live the life of an exile with his wife and child. However by reconciling Visvāmītra and his cliques, Harischandra regained his kingdom and throne. Harischandra was succeeded by his son Rohidasva (Rohitasva : ×, 7, 3). It is mentioned (Ait. Br. 7, 13) that Ikshvāku Harischandra had no son. And he vowed to Varuna that if he would have children, he would offer the first-born to him. But when Rohita was born he hesitated to sacrifice him. And Rohita purchased with a hundred cattle Sunasepa Ajigarta from his destitute father Ajigarta to sacrifice him to Varuna in his place. Ajigarta and Jamadāgni were the sons of Richika and Satyavati, sister of Visvāmītra. He was bound. And Sunasepa prayed to gods (1, 24) and one by one all his bonds (pāsam : 1, 24, 15 : ✓ pak = to bind, fasten, fix, hold fast. Skt. pas = to bind ; pāsa = a fetter. Gk. peg-nimi = I fasten ; Goth. fah-an = to fasten) loosened. Sunasepa was adopted by Visvāmītra as his son and was named Devarāta (Devavāta : 3, 23, 2-3). Human sacrifice is rare in Vedic literature. It was possibly a symbolic offering.

Gāthina (1, 7, 1) is the Pur. Kausika Gādhi. In Zagros Range in Babylonian and Assyrian times there were Gutaeans and Cossaei (Kassite) tribes (14 E.B. Persia). Upper Tigris was occupied by Gudi (Kurds, called by the Khattis of 1370 B. C. as Gurda) and the kindred tribe, Kassu (Puranic Kusika. Kasa = Kassites (14 E.B. Kurdistan). Mitanni Aryans were so powerful that Egyptian monarchy for centuries to secure their power felt it necessary to obtain Mitanni princesses as queens, and thus their military alliance. For Dasaratha's daughter Tadukhippa, Amenophis III sent an ambassador Mani, the bearer of presents and a royal letter. What I send thee is

naught ; but if thou grantest me the wife I desire, presents will follow. Dasaratha's daughter set out with the ambassador, accompanied by a few hundred Mitanni ladies with a chapel for the worship of her gods. Her father wrote : A great friendship united thy sire with me. Now I shall feel greater affection for thee, his son. Thus practically Egyptian royalty became Mitannian in blood and sentiments. Matiani occupied Azerbaijan even in Alexander's time (325 B. C.) and Lake Urumiya was known as L. Matianus from the settlements of the Mitannis there. Mitanni (Mitajnu ; 3, 59, 3 ; 6, 32, 3) is a compound word for Mitra (friendly-allied) and anika=forces. √ mit=to exchange. Skt. mith-as=reciprocally, mit-ra=friend, mith-una=sexual union. Avestan Mithra=friendly god, Vedic Mitra. Goth. mis-so=reciprocally, √ ar=to gain. Skt. ar a=spoke of wheel ; ari=enemy ; anika=army or forces. Gk. ar-menos=fitted. Lat. ar-mus=arms. Goth. ar-ms=arms ; **Gadhi**, Gudea and Gutean might have been derived from √ gat=to seize ; Skt. gadhā=club ; gādā=greed ; gāthā=poetry ; gāthin=singer. Gk. kand-anein=to grasp ; Lat. praeda=prey, booty ; Goth. bi-gat-an=to find ; As. git-an=to get. From **Gadadhara** (Hercules), the wielder of the club, and therefore giver of power and goods, German Goth. Eng. god might have been derived. **Gadhi** of Kanya Kubja seems to of mixed Gudea (Gudi=Kurds : Goths), Mitannis and Kassite origin. He is known also as Kusika (Kasa=Kassite) Gāthina (1, 7, 1 : singer). It seems that the Gādhī people came with the Kāsis (Kassites) and were known as Kausikas (1, 10, 11). Like the Gudea people (Pātesi : Skt. pati=lord ; isa=lord ; Patisa=overlord) in Babylonia, the Gādhī people were also priest-kings. However in Kanyakubja they have played not very important parts except Ikṣvāku Satyavrata Trisanku was put on the throne by Gādhī's son Visvamitra, displacing the services of Vasisthas who were their hereditary priests and was the king-maker of Trisanku's son Harishcandra ; and Visvamitra's Gāyatri hymn (3, 62, 10) which is very similar to that of Akhen-Aton's Aten cult. The incursions of the Kāsis (Kassites) as spear-heads into the Gangetic valley (Kāsi) and Kusika Gadhis as rear guards in Kanyakubja overthrew mighty kingdoms and created great racial movements.

The Anava kingdom of Usinara Sibi, extending from the Punjab to Magadha, was split up into two parts, the central portion being occupied by the Kusika Gadhis and Kāsas about 1875 B. C. The northern parts by the Caspian Yaudheyas, Madras, Krimis, Ambasthas, Sauviras and Keykayas. The Puru kingdom which bore the brunt of the war was practically wiped out for centuries. The Haihayas advancing over the prostrate Paurava territory attacked the Kāsi kingdom and kept it under their yoke for more than a century and half (1900—1750 B. C.). Before the onslaught of the Haihayas Kānyakubja kingdom disappeared, about 1835 B. C. and Gādhi's son Visvaratha became a priest under the name of Visvāmitra. The shock was so great that even the ancient Ikshvaku throne was shaking to its foundation from the time of Satyavrata Trisanku (1855 B. C.) to the time of Sagara (1725 B. C.) who secured it by driving out the Haihayas out of the Midland in alliance with the Kāsi king Pratardhana. This gave the Turvasus and their ally the Purus to rise again under the leadership of Dasyanta who also fortified his position by marrying Sakuntalā, a girl of powerful priestly Visvāmitra family. After their son Bharata (1700 B. C.), Bhāratavarsha has been named. Kausika Gadhi in order to strengthen his position gave his daughter Satyavati to the famous archer Bhārgava (Bryges) Richika. Their son was Jamadagni (3, 53, 15-16), a reputed archer and warrior; and his son was Rāma who knew how to fight valiantly with his axe (*parasu*, Gk. *pelekys*; Assyrian *pillaku*). But this availed nothing. As a ruling power, Gādhi family disappeared, and their kingdom vanished. After two centuries it was incorporated in the rising Puru domain. "That adorable Savitar, bright god (is) supreme wisdom which stimulates our intellect (3, 62, 10)". This seems to have been the hymn composed by Vivāmitra Gāthina himself as his nephew and contemporary Jamadagni is mentioned in 3, 62, 18. Rigvedic Third Book is the composition of the Visvamitras. There is a Gaddi tribe in Chamba and Kangra (Gaderan), divided into Brahmins, Khattris and Rajputs. The men are well-built, tall light-coloured dolicocephals; women are comely, fond of dancing and singing. Divorcé among the Gaddis is permitted by mutual consent. Widow marriage

is customary. But if the widow remains in her deceased husband's house, wears a red Sari in the name of hearth or axe (darat), her child born inherits the property.

Amura (7, 61, 6) is the Assyrian Amurru (ideographically Martu), Egyptian Amar, Pur. Amara and the Bib. Amorite (11, 14 E. B. Amorite). Amara is derived from $\sqrt{\text{mar}}$ = to grind, kill, die. Skt. *mri* = to die; *mrita* = dead, calcined, *mara* = mortal; *amara* = immortal; *martya* (1, 19, 2; 1, 36, 4) = mortal; *amura* (4, 4, 12) = immortal; Gk. *mar-einen* = to wither; *amortos* = immortal; Lat. *mars* = death, *mar-cere* = to wither, *morbus* = disease. Teut. *mara* = demon (mare in night mare) = O. Sl. *mora* = witch, demon = Ir. *mari-gaim* goblin queen = Buddhist *mara* (Av. 6, 193). $\sqrt{\text{Kam}}$ or $\sqrt{\text{ham}}$ = to bend. Skt. *kmar* = to be crooked; *kshama* = benevolent; *kshamā* = to forgive; Gk. *kam-ara* = vault; Lat. *cam-era* = vault, *cam-urus* = crooked. As, *hamm* = hem, the border. $\sqrt{\text{rab}}$, *lab* = to seize, to be energetic, Skt. *Rabi* = the furious sun, *Ribhu*, the solar deity which regulates the differences between the lunar and solar year by 12 intercalary days. Gk. *elab-on* = to take; Lat. *rab-ere* = to rage, *rob-ur* = strength, *labar* = toil; Lith. *loba* = work. Russ. *rab-ota* = toil. **Tuji** (6, 26, 4) is the Tajik of Afghanistan, Iran and the Pamir region; Tushara and Takshaka Nāgas of the Purāṇas, the Tocharians of the Greeks, speaking an Aryan tongue of centum variety. Quite a number of the Tajiks are still found who are tall (1 M, 68), long-headed, blue-eyed, long-slender-nosed, flaxen-haired. But majority of them are mixed with Alpines. **Mrigaya** (4, 16, 13; 8, 8, 9) is the Iranian Margu, Margians of the Greeks, on the river Mergus (Murghab), inhabiting the oasis of Merv. **Pratardanih** (6, 26, 8) are the sons Vatsa and Garga, — of Kasi king Pratardhana (1725 B. C.). His father was Divodasa, who was defeated by the Haihayas who had been ruling Kasi kingdom for 200 years. Vatsa married Madālasa, a Nāga (mixed Caspian) princess. With the assistance of the Nāgas Alarka (1712 B. C.) son of Vatsa and Madalasā regained his ancestral Kasi throne by driving out the Haihayas who were harassed by Iksvāku Sagara. Kasa was the founder of the Kāsi dynasty. Kasa was Kassitē, Babylonian. Kasshu, Egyptian Kush, Biblical Kushite, Iranian Cossaei. Kasshu came by Gilgit passes. Kāsh-mir

has been named after them. There is still a Khos tribe in Chitrol. There are Khasa tribes in Dehradun and Simla Hills, Khos tribe in Nepal. The Khasas of Dehradun and Simla Hill are very tall, long-headed with hazel eyes and broad face, with square jaws and broad chin, aquiline nose and thick beard. They practise fraternal polyandry. And their sexual morals are loose. This is the general characteristic of all Caspian tribes to which the Kassites and Assyrians belonged. From the Dehradun valley through the Gangetic basin the Kāsas (Kesin : 3, 41, 9) reached Kāsi, conquering and displacing the intermediate territories which were occupied by the Anavas and the Purus about 1950 B. C. The incursion of the Kassites and of the Kausika Gadhis who were also mixed Kassites and who followed them as a rearguard caused great racial and political disturbance which lasted for more than two centuries before social order, peace and prosperity could be re-established under the domination of the Khatti Purus. **Danu** (4, 30, 7; **Dānava** : 4, 26, 4; x, 120, 6) is the Caspian Danaus (Gk. Danaoi, Bib. Dan, Egypt. Danauna, Av. Danus). After their settlements the Don, Dnieper and Danube have been named. Danaus was the king of Argos, and Danaides are described as cruel and blood-thirsty. Danans settled on the sea-coast of Syria, next to Philistines (Pelasgi, Vedic Pulasti), and they plundered the caravans which the weak rulers of Egyptian 18th dynasty could not prevent. Danans introduced bull worship and was regarded as embodiment of wickedness and was the unredeemed tribe (Rev. 7, 5). In Avesta we find that Danus (Aban Yast 73; Farv. y. 38) are numerous and fierce fighters. According to Puranas the Bhārgavas (Bhryges - Phrygians) were the priests of the Dānavas. Bhṛigu married Saci Paulomi (authoress of x, 159), a daughter of Dānava chief Pulaman. Kavi Usanas Sukra was the priest of Dānava Vāishaparvan and Sukra's daughter was married to Yayāti, possibly of Mediterranean descent. **Sambara** (1, 51, 6) is very frequently met with in the Vedas, and generally as the enemy of Ajamira Divodāsa of Pāncāla and Dasaratha of Ayodhyā. Sambara is mixed Cimbri. Cimbri was a powerful Caspian tribe. It twice defeated in 113 and 109 B. C. the arrogant imperial mighty Roman army. It wandered along the Danube, the

Rhine. It entered into Italy, passed through Spain into Africa. It is also possible that the Cimbri turned eastward. In Tibet, Bhutan, Sikkim, there are pronounced Caspian factors. In Chinese Szechwan and Yunnan Moso and Hsifan tribes have Caspian blood in them. The Mon khmer peoples of the Mekong valley are a mixture of the Caspians with Negritoes and Australoids in various proportions. The *Cham* people, Pnong, Mon and Kha of the higher plateaus and mountains are still high-vaulted dolichocephals with tall figures, fair complexion, narrow and sometimes aquiline nose, non-Mongoloid eyes and wavy hair. Sambara is the living Sabara, Puranic Sumbhu and Nisumbu who in prehistoric times spread all over India. The buffalo is associated with Mon-khemer culture. They are the Mon-khemer Mahishas in different mixtures—Sumbha, Nisumbha—people who were conquered by the Turvasus. Hence the Mediterranean goddess Isani (Virgo) riding over lion (Leo) kills Mahisha. Todas were also of the same race, but an isolated clan of purer breed.

Cumuri (2, 15, 9) is the Cimmerii. Crimia has been named after them. It is possibly identified with the Bib. Canaanite Assy. Ginnara, Pur. Kinnara. They were expert horsemen. Through Caucasus they overran Armenia, and Asia Minor. Naramsin of Agad about 2500 B. C. had to defend his empire against the attacks of Umman-Manda. Manda (Murunda) is a Cimmerian tribe. From the settlement of Manda, Media has been named. In the eighth century B. C. the Cimmerii coming from Armenia destroyed *Phrygian* (Bhrigu) kingdom on the ruins of which Lydia rose with Sardis as Capital. A second Cimmerian invasion, especially under its leader Cyaxeres of Ecbatana, destroyed the rising kingdom of Lydia. When the Manda king Dugdamme died (Lygdamis of Strabo. 1, 3, 16) it was regarded by Ashir-bani-pal as a divine favour. But during the reign of his successor Ashur-etil-ilani Scythians devastated Assyria and penetrated into the border of Egypt. Calap was levelled with the ground. And Assyria could only save itself within the strong ramparts of Nineveh. Ashur-etil-ilani was succeeded by his brother Sinsar-iksun (Sarakas of Berossus), but he had to wage a war to suppress the rebellion of his viceroy Nabopolassar of Babylonia. Babylonians

were aided by the Manda king of Ecbatana, Cyaxeres of the Greeks, and Ninevah was captured and burnt by the indomitable Scythian army. Cyrus (Kamboja Kuru), the Achaemenide king of Anshan in Elam with the aid of the Parsas (Purus) revolted against his suzerain, the Manda king of Ecbatana. The army of Astyages (Azi Dahaka) was permeated with intrigues, and out of mutual jealousy, they betrayed their king to Cyrus. Cyrus established himself at Ecbatana and consolidated the Iranian army under the Parsa leadership. Like the inscriptions of Naramsin of Agade, a tablet has been found at Sarpour of 2550 B. C. with Caspian types of men, under the name of Lulli. Sargon II (722-707) mentions that Emi (Elam) was occupied by Kassipi (Arm. Quessaye; Skt. Kasyapa), and its capital Kisesin, as pictured at Sargon's palace at Khorsabad, stands on a high ground, surrounded by three walls and tower like tall houses, and there was a big canal at the foot of Mt. Kispal. At Kurangun, not far from Persepolis, there are rock sculptures of 2400 B. C. in which the god sits on a throne formed by a coiled snake, and in his head cap there are two horns on each side. In his hands the god holds a vase from which water flows towards the worshippers on both sides. In front of the god there is an altar like that of the Khattis. God and goddess wear long side curls like the old Khatti heads from Tell Halap. The women worshippers wear Khatti trailing skirts and the masculine headdress resembles the Phrygian cap. The head form of the gods and the worshippers is brachycephalic with high bridged aquiline nose. Almost a replica of the Kurangun sculpture of about 1500 B. C. existed at Nakshi Ristan, the burial place of Achaemenide kings where Bahran II (274 A. D.) had a new sculpture executed over the old. Assyr. ruler Salmanassar in 835 B. C. mentions Amadai (Mada), Parsuas (Parsa), Parthava and Patishvara (Behi O. P. Baga, Skt. Bhaga) stan Ins. Pati=lord, shvara, Skt. svar, O. P. hvara, Ar. svara, Per. khwar), the region between Demavend and Salt Desert. It is a pure Aryan word, and not Ir. where *s* is pronounced as *h* and *v* as *p*. Sargon mentions that Kshathrita, a chief of Kar-kassi made a coalition with Dahyupati (ruler over Dahae - Daci Rv. Dasa) Mada Vahmyatarpah. The coalition conquered

Kisesin in 678 B. C. Asurbanipal in 639 B. C. mentions that as he conquered Elam, Kurus, Parsuawa ruler sent his son Arvataspa (Ariukku) to Nineveh with presents. Kurus founded Pasargadae in 559 B. C. Darius mentions that his great grandfather was Aryaramna (Arya Ramana), ruler of Parsa. When Cyrus conquered Ansan and Acbatana, his brother Aryaramna was made ruler of Parsa. It seems that Kurus (Caspians) conquered the Parsas, and they were amalgamated. And there was some Aryan blood among them as the name Aryaramna indicates. The Aryans reached Demavend region and Media in 9th century B. C. from *Airanivej*, the territory between the Oxus and the Iaxartes.

Palasti (3, 53, 16) is Assyr. Palastu or Pilastu, Egyp. Pulesati, Bib. Philistine, Gk. Pelasgos, Pur. Pulasta, possibly also Pulama' (predatory Poligars of Deccan). In Egyptian monuments Pulesati (Purasati) is mentioned as belonging to a confederation which threatened Egypt in the Mitannian Twelfth Dynasty. In the eighth year of Rameses III (1184 B. C.) the Pulesati was pushing towards Egypt on land and sea. Syrian states were overwhelmed, and the Pulesati advanced towards Egypt. Ramases III collected a large army and navy, inflicted on the Pulasati a disastrous defeat and rout. The Egyptian monuments represent the Pulesati with a distinctive feather head-dress, resembling that of the Lycians and Mycenaeans. The Philistines, after which the country has been named Palestine, formed a confederation of five cities (Ashdod, Ascalon, Ekrom, Gath, Gaza) which remained unconquered by the Israelites (Josh. 13. 2). A Pulasta chief married Dravira, daughter of Alpine Bessi (Vaisya) Trinavindu (1300 B. C.) of Vaisali dynasty. Trinavindu's son was Visāla who founded the great city of Vaisali, famed in Buddhistic annals. Pulasta and Dravira's son was Visravas. Visravas married Devavarnini, belonging to Angiras Brishapati family, priests of Trinavindus. Their son was Vaisravana Kubera who ruled over the Yakshas (Veddas—Australoid). Kuvera for his vast possessions over the Yakshas became the presiding deity of wealth. And *Yakshi* in Buddhist literature became identified with *Siri-mā* (Sri=Lat. Ceres). Yuechies were also called Yakshas; possibly both are mixed up. However *Yakshi* is represented

of a pretty Kushan type. Kuvera's descendants had four sons—Nala, Kuvera, Ravana, Kumbha-karna, Bibhisena and a daughter Surpa-nākā. Nākā was also the name and title of the Sakas. The Chandra Vamsa of Bhava Nāgas was called Nākavant. Chandragupta married Kubera Nāgā. Nākā and Nāgā were synonymous with slight phonetic change; or it might be Surpa-nāsā or nākhā—sharp-nosed, that is aquiline nosed, a marked Caspian trait. S and Kha are interchangeable as Tushara=Tukhara. Rāma fought a long war with Ravana (the title of the Pulasta kings) with the aid of Bibhisena in which Ravana was defeated and Bibhisena was put on the throne. Ravana had married Mandā-udari (slender-waisted: this wasp waist with a tightened waistband was the fashion with the Mycenaeans), daughter of Maya Dānava; his other daughter Māyāvati was married to an iron-armoured Sambara chief (Siva P. 6, 13). After Ravana was killed, Mandhodari became the queen of Bibhisena. Pelasgi, Etruscan and Itara have been identified to be the same people, allied to Danaus (Dānavas) and Bryges (Bhrigus). Purānic Mleccha is the Molossi, a most powerful people in Epirus, inhabiting a narrow slip of country, called after them Molossia. Sargon 1 of (2650 B.C.) of Agade of Caspian origin called the northern part of the river plains Melucha land possibly after their settlements. There was a Melchi people in Palestine (Lu. 3, 24), Melchizedek (Gen. 14, 19).

Sakaputa (X. 132, 5) is Sakaputra—a Saka descendant. "This crime Sakaputa has committed that he has killed the heroes that took shelter as friends (X, 132, 5)". No doubt it is a revolting transgression against ethics of hospitality. But the Sakas were cruel and ferocious nomads. Saka is the Sacaes, one of the most numerous and most powerful of the Scythian tribes. They were very warlike and excelled especially as cavalry and as archers both on horse and foot. According to the Chinese Sek or Sces tribe settled near modern Kashgar. About 160 B. C. the Sakas were driven south by the advance of the Yuechi (Tochari). One portion settled in Western Afghanistan, hence called Sakasthana (Seistan). The other section occupied the Punjab, Sind, Gujrat, Malava and Nasik and the rulers adopted the title of Kshatrapa or Chatrapa, a shortened

forms of Chatrapati. **Parthava** (6, 27, 8) is Parni Parthian, a Saka clan. On the Yavyāvati (Zhob) the Parthians, under their emperor Cyamana Abhayavarti with a Sunasepha Devarata descendant as a priest, in alliance with Dacian Ajamira Srinjaya defeated Turvasus and Vrichivans (6, 27, 5). Prithu Venya introduced agriculture in N. Bengal (X, 148.5).

Bhrigu is the Phryges (freeman) who occupied the Trojan region across the Bosphorus about 1300 B. C. from Thracia where they were known as Bryges, by defeating the Khattis who defended their homeland with their temple priestesses (amazons) in Sangarius Valley which contains their antiquities. When Troy was captured by Achaean Aryans overthrowing Priam, Phryges by 980 B. C. had penetrated southward as far as the Hermus and eastward to the Halys over the prostrate Khatti kingdom. But over greater-part of the territory they were unable to consolidate their position. It is said that Bryges in a Thracian forest fire discovered the process of iron smelting. Pānini in his Ganapatha (4, 1, 178) mentions Bharga (Bhrigu) tribe in N. India with Karushas and Kekayas. Bhrigus are associated with Dānavas. Bhrigu Cyavana married Saci Paulami; a daughter of Dānava Pulaman. Pulāman may be a variation of Pulasta, or two allied clans. His son Kavi Usanas Sukra was the priest of Dānava Brisaparvan. Bhrigus were fire-kindlers. "The Bhrigu kindles Agni in the centre of the earth by physical strength (through friction of dry woods which requires great strength: 1, 143, 4)." The Bhrigu placed Agni among the tribes of man (2, 4, 2). Gk. Phlegyas, a similar name like Bhrigu, set fire to the temple of Apollo. Bhrigu's son Apnavāna spread fire from house to house from sparks engendered through friction of woods (4, 7, 1). Jamadagni, is found associated with Palasti (Pulasta: 3, 53, 16; 7, 96, 3). Bhrigus settled in Broach (Bhrigu Kaccha).

Agastya (1, 179, 6) with his wife Lopāmudra is found in an erotic stanza. Pulasta's son was Dattoli who was known as Agastya (Mā-k P. 52, 22). According to the myths Mitra and Varuna at the sight of seductive nymph Urvasi discharged their semen in the sacrificial Kumbha (pitcher) in which were born Māna (Agastya) and Vasishtha (7, 32, 13). In

Farvardin Fast (29, 138) Khumbya,—the son of the Jar (Kumbha) is also found. It is likely that Agastya and Vasishtha favoured the worship of Aquarius (Kumbha).

About 30,000 years ago paleolithic man, in Moravia, whose cranium is of Caspian type, hunted mammoth, made clay statuettes of mammoth, lion, bear, woolly rhinoceros, reneer, owls, horse and Venus. They also made bone needles and artefacts. Eyes were also made in the bone-needles. Swan's bones were notched and made into whistles. The statuettes were made up of bones, ground to powder, mixed with loes and fat and made into a paste. A similar paleolithic cave bear found in the Isturitz cave in the Pyrenees. The bears are still worshipped by many Siberian tribes. While the Moravian owls and Venus are made of clay, Irkutsk mammoth hunters made them of ivory. But Maravian owls and Venus were tattooed and dimpled, indicating that they were used in fertility rites (I. L. N. 28/1936. A horse's head; an auroch, a wolverene and a woolly rhinoceros (Rhinoceros ticharinus in relief has been found at Las Carnes cave of the Aurignacian period (30,000—25,000 B. C.) in Spain (I. L. N. May 25, 1935). In the Hoggar Mountains of Central Sahara a rock-engraving of an ox with lyre-shaped horns and a spotted leopard. Above it is a lion with its mane and tail, like certain Scytho-Siberian bronzes. And there are ochre-coloured paintings of two nude very tall well-built archers with a double-curved bow in the right hand and a kind of boomerang in the left hand. And two very tall nude dancers with puffed-up hair-dress (Caspian). And a fresco-painting of massed cattle with lyre-shaped horns and men (I. L. N. Jan. 1-1939). The Scythian golden sheath of 7th century B.C. found in Kalermes Barrow in Kuban District on the Azob Sea, now in Moscow Museum, contains a winged lion, holding a drawn bow and arrow with an artificial hand, arising out of its shoulder. The helve of iron, encased in gold, has in relief the horses, and Siberian lions, oxes, elkes, goats. The pommel of gold-on-iron sword hilt consists of two adorsed bovine heads, richly bedecked with sacrificial necklace; on the gold-comb of sixth century B. C. found in the Solokla Barrow, Dnieper district, two Scythian warriors clad in hide

garment, head helmeted, a hide shield in the left arm, and a dagger in the right hand, rush in from either side with pantherlike movement, attacking a cavalier, wearing a metallic ringed armour on his breast and throwing a lance from his magnificent prancing horse (1. L. N. August 24-1935). Herodotus says of the Scythians. The Scythian soldier drinks the blood of the first man he overthrows in battle. Once a year the governor of each district, at a set place, mingles a bowl of wine, often mixed with the blood of the enemy, of which all Scythians who have slain a foe have a right to drink. Among the Issedons when a man's father dies, all the near relatives bring sheep to the house. These are sacrificed and their flesh cut to pieces while the dead body undergoes the like treatment. The two sorts of flesh are mixed together, and the whole is served at the banquet. The head of the dead man is stripped bare, cleansed and set in gold. It then becomes a sacred object and is brought out year by year at the great festival which sons keep in honour of their fathers.

Kasyapa (9, 114, 2) is the generic name of the Caspian: Mt Demavend was called Kāsyapa and the Caspian Sea was named because the Caspians lived there. In the Iranian population, there is a strong Caspian factor, marked by tall stature, dolichocephalic head with broad face and prominent nose and hazel eyes. Caucasus means *Kuh-kas*, the abode of Kas or Kassites. Kashmir was also settled by Kāsyapas who gave the valley name after them, Kāsa or Khas (Kassite), but were driven out by Takshaka Nāgas (Tajiks; MBh. 2, 82), and later dominated by Pisācas, Daradas (Alpines). and Karkata Nāgas: Though Kāsyapas (3, 41, 9: Sat Br. Kesin Darbhya = Kassites) had no Family Book, yet there are numerous Rik compositions by Kāsyapas (1, 99; 8, 29; 9, 64, 67, 91). *Daitya* is Mongoloid *Daitu* tribe. The river Araxes was called Dait, for Daetus lived there. Another Mongoloid tribe was Kirāta (Kitara).

Bheda (7, 18, 8; 7, 83, 5) is the Australoid Veddah and Yakshu (7, 18, 19: Skt. Yaksha) belong to the same race, possibly an allied tribe. The skulls found Aditnallur, and at Sialkot and at Mohen-jo-daro are of Australoid Veddah type. **Rakshasas** (7, 15, 10; 7 101: 13-16) Skt. Rākshasas are the

Negroes. In the epics Dānāvas and Mlecchas (Caspians) are called Rākshasas. The Jewingi skull of S. India shows Negroid traits. Vasishtha (7, 104, 4) : Burn them in flames and throw them into deep wells (5). Bury them and their children under the earth (11). Slay their males and females. Their gods (mura-devah=foolish gods) are fools like themselves.

9.—SOCIAL LIFE OF THE ARYANS

Aryans called themselves *Krishtayah* (1, 4, 6). *Krishtaya* √is the cultivator, the tiller of the soil. √Kar or Kal=to move. Skt. krishi=agriculture; krishaka, krishtaya=cultivator. Lat. cultus=tilled, pp of colere=to till; Gk. boy-kol-os=a cattle-driver. The cultivated land was called urvarā (1, 127, 6; Gk. aroyra. Lat. arare, Khatti are=plough; Av. urveranam, Skt. urvarānan). The cultivators need fixed habitations of the people—vasatim janānām (5, 2, 6). √vas=to dwell. Skt. vasati=dwelling place, vāstu=a house; Gk. as-ty=a city. Lat. ner-na—a home born slave. Goth. wis-an=to remain. Skt. Jana=Gk. genos=Roman gens=Av. Zantu=Skt. Jnāti=clan. √Gan=to beget. Skt. janaka=bgetter; jan-ani=mother. Gk. gen-os=tribe, gen-esis=origin, gyne=woman. Lat. gi-gn-ere=to beget, gen-itor=father, gen-us=kind, gens=clan. Goth. kein-an=to germinate, kuni=kin, kwino=a woman. The settlement of a clan was called vis (7, 33, 6). As the sticks and lashes drive out the cattle, so the Bharata Janāh were scattered. But when Vasishthas became their leader, then the Tritsu clannish settlements (viso) widely extended (7, 33, 6). "To strong Rudra with hair-khots on his head (kapardina) we bring our songs of praise so that all our bipeds (men) and quadrupeds (cattle) in this village (grāma) remain well-fed and healthy (1, 114, 1). Quite different from Grāma (X, 127, 5) is the forest—Aranya (x, 146, 1). √Gar=to contain. Skt. grāma=village, griha=house (x, 85, 26). Gk. kor-os=a dance in an enclosure, kor-tos=an enclosure. Lat. hortus=a yard, a garden. As gear-d

=yard. So *grāma* seems to be an enclosure of high ground, surrounded by wooden or tree barricades to protect the villagers and their cattle against the attacks of ferocious animals or of hostile raiders. Densely populated place was called *pura* (1, 53, 7), *puri* (6, 2, 7), the Gk. *polis*, and Lith. *pilis*. *Khatti pir*=house. *Durga* (5, 38, 7) is a fortified place where one cannot enter without difficulty. *Durga* is Ger. *burg*, Lat. *burgus*, Fr. *bourg*, Eng. *borough*. √*Dar*=to tear. *rend*, *rive*. Skt. *dri*=to burst open, Avestan *dar*=to cut. Gk. *der-em*=to flay. Lat. *dol-are*=to destroy, *dol-or*=pain, Russ. *dra-te*=to tear, *dira*=a rent. Goth. *ga-tair-an*=to break, to destroy. As. *ter-an*=to tear. Skt. *druh*=to injure. Av. *drug*, O. Norse *dræwer*, O. Sax. *gidrog*=Ghost. *Dama* (1, 75, 5) is a wooden house, Gk. *dōmos*, Lat. *domus*, OSI. *domu*, modern Skt. *dhāma*. √*Dam*=to build. Gk. *dem-em*=to build of wood by a carpenter, *dem-os*=building, room. Lat. *dom-us*=a house; Goth. *tim-r-ian*=to build, joiner, As. *tim-ber*=timber. *Taksan* (9, 1112, 1)—Av. *tashan*—Gk. *takan*, all meaning carpenter. *Gostha* (1, 191, 4), *gotra* (1, 51, 3) are enclosures of cattle (go) as well as men as they lived together. √*Gu*=to low. Skt. *gu*=to sound; *go*=bull, cow; *go-pa*=cow-heard, village head. Gk. *go-as*=to lament, *bo-s*=ox, Lat. *bo-are*=to shout, *bos*=ox. As. *cu*=cow. Goth. *gavi*, O. Ger. *gewi*=cow, like Skt. *go-pa*. Ger. *gau-leiter* means the leader of a district. *Griham* (X, 85, 26) is the dwelling, and *griha-patni* (X, 85, 26) is the mistress of the dwelling. Skt. *griha*=Avestan *geredha*=Lat. *crypta*—Gk. *gype*, *crypte*=grotto, an underground cave. Gk. *thalamos* (inner chamber) is derived from Gk. *tholos*, which means cave as O. Ger. *dal*. It seems therefore that ancient Aryans lived in caverns. According to Tacitus (Germ. 16) Germans used to keep their provisions in subterranean chambers. O. Ice. *Dynnja* means cave where women used to spin. *Dvār* (1, 48, 15)—Av. *dvara*=Lith. *duris*=Russ. *dveri*=O. Sl. *dviri*=Gk. *thyra*=Lat. *foris*—Goth. *daur*=Ger. *thor*=door. √*Du*=to enter. Skt. *dvār*=door. Gk. *du-esthai*=to enter. Lat. *duc-ere*=to lead. Goth. *tiuh-an*=draw, to pull. The wooden door frame is Skt. *āta*, Av. *Aithya*, Lat. *antae*, Ice. *ond* (porch). Though *Sālā* (Av. 3, 12, 1) originally meant a long covered room, Lat. *cella*, Fr. *salle*, Gk.

kalya, Eng. hall, among the Aryans it meant a hut, almost like a nomadic tent. √Kal=to hide, cella=a cell. As. hel-an-to hide. "Here I fix my Sāla firm. May it stand securely (sprinkling Ghee: as a magical rite). In this sāla, may we dwell with our soldiers, heroes and unwounded fighters (Av. 3, 12, 1). A great garner art thou O Sāla with big roof of cleansed grains. To thee may the boy (kumāra) bring in the evening the kine with calves, leaping with joy (Av. 3, 12, 3). O patron deity of the house, whom the gods have made our protectress clothed in grass (trina vasanā=grass roofed; Gk. orophe, cover of domos was made of orophos=rushes, and Lat. culmen, roof of culmus=straw), bring us welfare. Give us wealth and heroes (Av. 3; 12, 5). Bring forward, O woman (Nāri=Av. nairi) the jar full of Ghee mixed with ambrosia. Offer it to her (the guardian deity of the dwelling, so that by the acceptance offering, may she protect us (Av. 3, 12, 8). Of the props (upamit), of the supports (pratimit) and also of the struts (parimit) of the hut (Sāla) which possesses all choice things, we unfasten the ties (Av. 9, 3, 1). Of thy beams (vamso=Goth. bagms, A. S. beam=tree), rafters (nāhana) and grass-stringed bindings, O thou that possessest all choice things, we unfasten the ties (9, 3, 4). Of the clamps (samddamsa), of the supports and the beams, now of the mistress of the dwelling (seems to be an idol as the guardian deity) we unfasten the ties (Av. 9, 3, 5). What hanging vessels (sikya) they bound on thee for thy comforts those we unfasten. Be thou O guardian deity, propitious into us (Av. 9, 3, 6). Oblation holder, fire-place (agni-sālā), ladies apartment (patnīnām sadanan) are thy seats, O goddess of the gods (Av. 9, 3, 7). The thousand-eyed net (akshu) stretched out as Opāsa on the division line and tied, we unfasten with prayer (brahman: Av. 9, 3, 8). The description of erecting and demolishing the Sāla shows it to be a flimsy straw-thatched hut. In Vendidad (Far. 8, 2, 3) we find about the disposal of the dead body. "If they find it easier to remove the dead than to remove the house, they shall take out the dead, and purify it with sweet smelling plants like garlic, benzoin, aloe and pomegranate. But if they find it easier to remove the house than to remove the dead, they shall

take away the house and purify it with the above mentioned sweet smelling plants." This also shows it to be a temporary straw thatched cottage or hut. To support the gable roofs there was a central timber post Skt. Sthuna, $\sqrt{\text{Stu}}$ =to make firm. Skt. sthula=strong, sthuna=a pillar. Gk. sty-en=to erect, sty-las=a pillar, sto-a=portico. Lat. stu-ppa=tow. Sthuna=Av. stuna=Lat. stele=Gk. stele.

Father was the despotic head of the family. He was the dam-pati (Sk. dam, Gk. domos, Lat. domus=house; pati, Av. paiti, Gk. posis, Lat. pot-is=master; dampati=Gk. despotes), the autocrat of the house. He could even sell, mortgage or kill his wife and children with impunity in very ancient times. Skt. pitar=Av. pitar=Gk. pater=Lat. pater=O Ger. fatar=Ger. fadar=Fr. pere=Sp. It. padre, Toch. Pātār, Arm. hair. $\sqrt{\text{Pa}}$ =to feed to protect. Skt. pusha=to feed, pushta=nourished, pā-laka=protector. Gk. pat emai-I eat. Lat. pabulum=food, pot-is=able (originally master), hos-pes=a protector of strangers, pa-nis=bread, pa-scere=to feed. Russ. pitate=to nourish. As. foda=food, food-or=fodder. Skt. pitri-vya=Gk. patros, Lat. patruus, As. faedera=father's brother. Skt. mātār, Av. matar, Gk. meter, Lat. mater, Ger. Mutter=O.Sl. Russ. mati=Lith. mote=Gael. mathair, Toch. mātār, Arm. mair. $\sqrt{\text{Ma}}$ =to measure Skt. mā-nam, mā-tram, mā-paka=measure, māsa=month; Gk. me-tron=Fr. metre. Lat. -me-tare=to measure out, mod-us=measure, moderation. Lith. me-ra, Russ. mie-ra=measure. Mother used to measure out food to the inmates of the house as to their requirements. She was the mistress=patni (Gk. potnia) of the house. Not only this, she used to keep order and discipline in the house and measure out punishment to her children and especially to female inmates for their negligence of duties or commission of wrongs. Skt. bhrātār=Av. bratar=Gk. phrater=Lat. frater=Lith. brolis=Russ. bratu=Ger. bruder, O. Sl. brātru, Toch. procer, Arm. bair, Cel. brather, Teut. bröder. $\sqrt{\text{Bhar}}$ =to maintain. Skt. bhara=supporter; bharana, bharata=supporting, maintaining; bhatra, bhatri, bhartā=supporter, protector, husband; vāryā=to be supported, wife. Gk. pher-em, Lat. fero=I bear, fer-tilis=fertile, for-tuna=fortune. As. ber-an=to bear. It seems that the brother's duty was to

support brothers, sisters, parents. Brother among all Aryans was the protector and guarantor of his sister's virginity and honour. If the sister had lost her virginity before marriage, he was disgraced before the assembly—Sabhā. He had to maintain his sisters, even if married, in case of their needs. Woman's chastity among the Aryans was highly prized and carefully protected, like the kingdom of a ruler (X, 109, 4). Brother ardently looks after the welfare of his sister (1, 65, 4). Brotherless girls went astray (1, 124, 7) = *lohita vāsasa*, the dress of prostitute, *abhrātaraiva jāmi* (Av. 1, 17, 1). Skt. *svasar* = Av. *qanhar*, Lat. *soror* = Gk. *eor* (daughter) = old Slav. Russ. *sestra* = Lith. *sesu* (gen. *sesseres*) = suister, Teut. *swistar*, Cel. *siur*, Ger. = *schwester* = sister. Its derivation is uncertain. But possibly it is derived from the same root as *svasti* which means joy and happiness. So *svasri* means one who pleases and looks after the welfare of her brothers. Skt. *vagini* means possessing *vaga* = fortune, amorous delights, vulva. Among the Caspians union of brother and sister was prevalent. √ *Bhag* = to eat, to enjoy. Gk. *phag-ein* = to eat, *phegos*, Lat. *ficus*. Skt. *bhagini* = sister, any woman or wife; *bhagin* = happy; *bhoja*, *bhoga* = enjoyment; *bhagin* = a voluptuary. Skt. *sunus* = Av. *hunu* = Gk. *huiois* = old Sl. *synu* = Lith. *sunus*, Goth. *sunur*, Ger. *sohn*, Toch. *soya* = son. *Su* = to generate. Skt. *suta* = son, *sukara* = pig. Gk. *hus* = a sow, *hui-os* = son. Lat. *sus* = pig, *su-inus* = belonging to pigs. As. *śu* = sow, *sw-in* = swine, *su-nu* = son. Skt. *putra* = Av. *puhra* = Gk. *pais* = Lat. *pu* = *pus*, *pu-tus*. √ *Pu* = to beget. Skt. *po-ta* = the young of any animal, *po-trin* = pig. Gk. *pais* = son, *po-los* = a foal. Lat. *pu-er* = a boy, *pu-ella* = a girl, *pu-llus* = the young of an animal. As. *fo-la* = a foal. Skt. *duhitar*, Av. *dughdhar*, Gk. *thugater*. Toch. *tkacer*, Arm. *lutr*, Lith. *duhte*, O. Sl. *dusti*, Russ. *dochi*, O. Ger. *tohtar* = daughter. √ *Dug* = to milk. Skt. *duha* = to milk, *dugdha* = milk, *du-hitri* = milker (of cows and mares). Goth. *dug-an*, As. *dug-an* = to be strong. So it was for the daughter to milk the domesticated animals, especially the cows and mares; as it was the son's duty to graze the cattle and to keep the stable clean. √ *Pu* = to purify, to cleanse. Skt. *pu-ta* = pure, cleaned; *pu-tra* = son. Gk. *pu-r* = fire (the purifier). Lat. *pu-tus* = cleansed, *pu-tare* = to cleanse, to prune trees; *pu-rus* = pure; *pu-teus* = a (clear) spring. As. *fy-r* = fire which

cleanses and purifies everything. Skt. Napat=Av. napat=Gk. anephiōs (nepodes, nephew, niece)=Lat. nepot (grandson), nepos (nephew)=O. Sl. netiji (grandson, nephew), Goth. nipjis (cousin), As. nefa, Cel. nia=grandson. Skt. snusā=Gk. nuos=Lat. nurus=Goth. snura=O. Sl. snucha, o. Ger. snura Ar. nu=daughter-in-law. ✓ Sna=to bind together, fasten. Skt. sneha=affection; snigdha=greasy, amiable; snāyu=tendon, Gk. ne-nin ne-thein=to spin, ne-ma=thread. Lat. ne-re=to. spin. So daughter-in law had to spin and attach every one by affection. Skt. svasura, Av. qasura, Gk. hekuras, Lat. socer, Goth. svaihiro, O. Sl. svekru, Lith. szeszuras, As. sweor, Ger. sweher, schwäher, Ar. skesair=father-in-law. Skt. svasru, Gk. hekura, Lat. socrus, O. Sl. svekry, Goth. svaihra=As. swēger, Ger. swigar, swieger, Ar. skesur=mother-in-law. ✓ sak=to follow, to fasten. Skt. sak-ta=attached. Gk. hep-etes=attendant; sattein=to fasten on a load, to pack, sag-ma=a pack-saddle. Lat. seqni=to follow; sec-undns=favourable; soc-ius=companion, sanc-ire=to bind by a religious ceremony; sac-er=holy. Lith. sek-ti to follow. Daughter-in-laws used to attend to the needs of their father-in-law and mother-in-law and obey them as a sanction. Skt. Devar=Gk. daer=Lat. levir=Lith. deweris=O. Sl. deveri=Goth. zeibbur, As. tacor, Arm. taiger. Devār means secondary (dva=second) husband (vara=bridegroom, husband) as husband's brother. Levirate was common not only among the Aryans, but also among many other races (Gen. 33; Deut. 25). Skt. Dva, dwa=Gk. dvo, Lat. duo, Lith. dwi, Russ. dva. Ger. Swei=two ✓ var=to choose, to like. Skt. vri=to choose, select, prefer; var-a=a wish, bridegroom, husband. Gk. boul-omai=I wish. Lat. col-o=I wish; vol-upis=agreeable, voluptuous. Goth. wil-jan=to wish. Among the S. Slavs, husband's brother or cousin (djever) lies between him and bride for the first night. Widow (vidhavā) welcomes her brother-in-law (devaram) to her bed as the wife desires her husband (X, 40, 2). In Russia it was the general custom to accord connubial rights over his brother's wife (snochā)—Skt. yātri, yātara=Gk. einateres=Lat. janitrix (Skt. janayatri)=O. Sl. jetri. Skt. Vidhavā=Lat. vidua=O. Sl. vidova=Goth. viduvo=Fr. veuve, Gk. hetheios, Russ. vdova, It. vedova, Sp. vidua, O. Ger. Wituwa, Per. beva=widow,

√Vid=to break through. Skt. vyadh=to pierce, vedhu=piercing, Vidavā=bereft of man or husband. As. wid=wide (separated), wid-u=cut wood, Goth. widu-wairus=bereft of supporter, orphaned; wair=a man, husband; widu-wo(ar)=widow. Skt. Vasā=wife. √vas=to desire, vās=to perfume, vasā=a female servant, a sterile cow; Vasaka=an obedient wife. Gk. ekon=willing; Lat. vacca. Fr. vache=cow. Lat. uxuries, Fr. espouse=wife. Skt. Jāmātar, Yāmatar, Av. Zamotar, Lat. genere, Fr. gendre=maker of offspring. √J(g)an=to beget. Skt. Janani=mother, Jayā=wife, Jamā=daughter; Jami=daughter-in-law, related like Lat. Jaminus, Fr. Jumeau, Skt. Yama (twin), Gk. Genos, Lat. Genus, Roman gens, Teut. Konya, Eng. Kin, Skt. Jama, Jāti,

Marriage was originally by capture and abduction, but was exogamous. Skt. Vivāha means carrying (vaha) the bride (vadhu) in a special (vi) way. The bridegroom used to come accompanied by his *best man* (Vara Yātrika) armed with sword, riding on horses or on chariots. They carried by force the weeping girl, defended by her kinsmen, with missiles, now symbolized by throwing cakes, hands bound, now symbolized by wearing iron bangles, and her body covered with wounds, now symbolized by wearing red Sāri and putting on vermillion mark on her forehead as a sign of marriage. √Vah=to carry, to remove; Skt. Vaha=vehicle, horse; Vi-vāha=carrying a thing (bride) in a special way=marriage. Lat. vehere=to carry dulcere (sweetheart), veh-iculum=a vehicle, via=way. As. weg-an=to carry, waggon. √Vad=to carry home, to wed a bride. Skt. vadh-u=a bride, Av. vadhrya=marriageable, vad-emno=he who conducts home a bridegroom. Gk. bre-in=to teem; a-ethlon=the prize of contest (to be carried home). Lat. vas=a pledge. Lith. wed-u=I conduct, I take home a bride; wad-as=a leader, a guide; wed-ys=a wooer; wed-lys=a bridegroom. Russ. ved-enie=carrying; ne-vies-ta=a bride, Goth. wadi=a pledge; Goth. bruths, Ger. braut, Teut. brudi=bride. As marriage by capture caused tribal feuds, it was substituted by purchase of bride from her parents through cattle which was the medium of value and exchange. The union between brother and sister is indicated by the pretty Yama and Yāmi dialogue poem (X, 10) but it

fell into disuse. However the Avestan Yima united with his twin sister Yemeh and produced the Iranian race. Among the Caspian Kamboja (Cambyes), Iranians marriage among kindred (Khastvadatha) had the religious sanction (Yasna 12). Vtaspa, father of Darius, married his own sister Hutos. Darius II married own sister Parysatis and they had two sons—Artaxerxes and Cyrus. After the death of Darius II, Artaxerxes (Arta Kshatra) ascended Achaemenian throne while his brother Cyrus rebelled against his authority by hiring to services of 13 thousand Greek mercenaries under the command of Clearchics. Artaxerxes was married to pretty Satira who was murdered by poison by Parysatis who forced her son Artaxerxes to marry his own daughter Atosā. In Purānas we have a number of instances of marriage with Pitrikanyās, which is father's daughter, that is most likely not uterine but step-sister. Nahusa married Virajā (mother of Yati and Yayāti); Kavi Usanas Sukra, Go (mother of—Tvastri, Varutrin, Sanda and Marka); Visvamahat of Ayodhyā dynasty, Yasodā (the mother of Dilipa Khatabhanga (1512 B.C.); of the same dynasty his ancestor Purukutsya, *Pitrikanyā*, Narmadā (the mother of Trasadasyu (1935 B.C.); Kāsyapa Asita, Ekaparnā (mother of Devala, who was a priest of (Yudhisthira : 1058 B.C.); Vyāsa's son Suka (1035), Pivari who had five sons and one daughter. Marriage between the near kindreds, particularly between the brother and sisters was a Caspian custom, especially of the Sakas. Marriage was preferred in the full-moon period in the waxing moon.

A maiden was called **Nandini**, joy giver, for father or guardian received for her valuable gifts of oxen, chariots, horses and arms. In Homer's time an adolescent girl was called, one who brought oxen (hedna). √Nad=to enjoy, to profit by. Skt. nand=to be pleased, nanday=to gladden, nandini=joy-bringer (daughter); Nanā-dri=husband's sister who is usually a good companion and friend of the newly married wife and who keeps her pleased by her refreshing smiles and humorous jokes. Gk. O-ni-ne-mi (=I benefit, profit; o-ne-simos=useful; Lith. nand-a=gain, produce; naud-ingas=useful, Goth. niut-an=to receive joy (or profit) from. The father usually received for the maiden the marriage gift of a hundred cows with a

chariot, and sometimes a horse (San. Gr. S. 1, 14, 16). And another as a guardianship transference fee (*gotrāntar dakshina*). Oxen, caparisoned steeds, shields spears and swords are given as presents to secure a wife. Wives receive no dowry. She makes a present of some arms to her husband, as a symbol, bravely to defend and protect her. What she receives as presents she has to return inviolate and honoured to her children, what her daughters-in-law are to receive and again transmit to her grand children (c. Hindu Stridhana : Tacitus—Ger. 18). Young maidens were brought up in the retirement of their homes where they busied themselves in domestic employments and only associated with men whenever a guest arrived at the paternal abode. An insult to female modesty or honor was deemed an unpardonable crime and punished with death. The virginal wreath was worn by the bride on wedding days. No maiden could wear it whose honor was not spotless. Slander, if proved, was punished with unusual severity. Rape under whatever circumstances was punished by the most degrading death, and even late in the Middle Ages, we find decreed, that in the house in which such a crime was committed, all it contained, even down to the cattle, should be deprived of life, and the house itself razed to the ground. But among the Frisii the woman was placed between her parents and her ravisher; if she turned towards the latter, the crime was forgiven. But if she turned to the former, the criminal was condemned to death. The bridegroom paid to bride's father, brother or guardian a sum fixed by law, upon which the right of guardianship, or that empowering him to appear in her stead before the tribunal was handed over to him (*gotrāntar dakshina* = transfer fee). The affianced pair shook hands (*panigraha*) and exchanged kisses and rings. It was usual to place a drawn and sharp sword for three nights between a newly married pair. Daughters did not inherit any property, woman's attraction was her virtue and beauty, and not her wealth. Marriages between the free and the slaves were illegal, and if they took place, his children lost caste and were declared bondmen. A freeborn man could marry his slave after having given her freedom; but a freeborn woman who united herself to a slave, being unable, on account of being

herself under guardianship to give him his freedom, became a slave, and to render the dishonorable act impossible, it was punished with death (severer than Manu's Laws. 3, 15; x, 30; W. Menzel—*Germany* P. 51). The bride was made to sit on a sheep skin or cow hide on her arrival to bridegroom's house. "On a bull's hide the husband makes her sit down and sacrifices. Through a period of three nights let them refrain from conjugal intercourse (*San. Gri. S. 1, 16, 2; 1, 17, 5*). In Rome the bride had to make offerings to Vases of water and Fire (Aqua and Igni), and to ensure fertility she was put on the lap of Priape, and Hymen in Greece, in Germany Fricco, and a boy was put on her lap. "Here some place a boy of good birth on both sides in her lap with this verse—into thy womb (*San. Gr. S. 1, 16, 8*)." The bride was carried to the nuptial bed with songs and dances. As a symbol of the rupture of hymen, a water jar is broken in Russia. And if the hymen was already ruptured, they send a broken jar to the bride's father. In Germany in the morning after the wedding the husband presented his wife with gift, called the morning gift, of which she could not be deprived; and if any one disputed her right, she proved it by placing her hand on her breast and swearing it was her wedding gift. And she exchanged her virginal wreath for a married woman's cap (W. Menzel—*Germany* P. 51). In O. Prussia, Greece, Rome and Aryavartta daughters did not inherit any property, except their marriage dowries (personal ornaments and clothing) over which she had only life interest. In case father died, brothers were bound to supply the marriage dowries. In Greece even in case there was no brother, daughter did not inherit anything unless she married one of her father's phratry. The idea prevailed that the land and the property belonged to the clan and could not be alienated to a different clan. Though the wife (Jaya) was the mistress of the house, she did not inherit any property. And if she did not give birth to sons, required for war and chase and for the worship of the manes (pitris: ancestors), the husband could take a secondary wife. Monogamy, however, was the usual rule among the Aryans. Only a few chiefs might have indulged in polygamy.

And if the wife was guilty of adultery, she was chased out of her home. The husband, guilty of the same offence, did not receive any chastisement. The wife, particularly of a chief, was usually burnt on the funeral pyre of her dead husband. And though a widower could remarry, a widow could not. But a daughter who has not been able to secure a husband (which was very rare), remaining in the father's house, inherits his property (2, 17, 7). A sonless father adopts his son-in-law and the son of his daughter becomes his son. Father is born in the womb of his daughter (3, 31, 1-2). "A wife is a comrade, a daughter a misery and a son a light in the highest heaven. The father entereth the wife, having becoming the germ; in the mother becoming renewed, he is born in the tenth month. A sonless one cannot attain heaven (*Ait. Br.* 7, 13). Wife was purchased. Adulterous wife's hair was cut, she was stripped naked and was expelled from the house in presence of her relatives and pursued with stripes through the whole village until she expired (*Tacit. Ger.* 19). The same custom prevailed in S. Russia even not long ago. Children are regarded with equal affection by their maternal uncles as by the father. So if there be no children, the next in inheritance are brothers, paternal and maternal uncles (*Tacit. Ger.* 23). "Let him abandon a barren wife in the tenth year, one who bears daughters in the twelfth, one whose children all die in the fifteenth (*Baud. D. S.* 2, 3, 4, 6). An adulterous wife should be deprived of all her privileges and ornaments. She shall lie on grass bed and be given treatment and food of a slave (*Yajna V. S.* 1, 70-72) "Woman can have but one husband as she can have but one body and one life. German women killed themselves in great numbers on the bodies of their slaughtered husbands (W. Menzel—*Germany*, P. 53).

But every Aryan youth could not procure a wife by purchase as it was very costly. So there were abductions and elopements, sometimes with mutual connivance. Youngmen run after women (1, 115, 2). Sexual impulsions generally ignore social laws and obstructions. And usually "maidens yield to the youth that ardently comes with love (x, 30, 6). And "wife (Jāya) is home (3, 53, 3)." And no home is real home without a loving dutiful wife and affectionate children.

The touch of her magnetic personality transmits and sublimates every petty dross into a divine hedonic bliss. And though woman was called Skt. Jani, Jnā, Av.ghena, Gk. gyne, O. Sl. zena, Gothic quino, all derived from $\sqrt{\text{Jan}}$ =to produce, meaning producer of children; she was also known as *ramani*=delightful and loving. $\sqrt{\text{Ra}}$ =to be delighted, to love, restful Skt. *ram*=to love, to be delighted; *ra-man*=sexual congress; pleasure; *ra-ti*=delight, Hindu Psyche. Gk. *E-ros*=love, the god of love. Lith. *rim-ti*=restful, *ram-as*=pleasure. As. *ra-est*=rest.

There were very few towns. Aryans preferred arable and pasture lands. Their homesteads and arable lands were private; but pasture lands and forests and their products were common to the vis—community. Their thatch roofed (wooden huts (*bhavana*. $\sqrt{\text{Bhu}}$ =to dwell, to grow. Lat. *tri-bus*=tribe, Gk. *phy-le*=clan. Lith. *bu-da*=hut, *buttas*=a house) with wooden doors and frames had very little furniture. People used to sleep on bear, antelope, sheep skins, cow hides, grass or hay. While eating they used to sit on distinct separate seats of antelope skins or grass (Vedic Aryans preferred *Kusa* grass—*Poa cynosuroides*) and food was placed on dry leaves of trees, joined together by grass stems. Women did not eat together with men, but they took their meals in the female apartment. Joint family was the custom. But the Gk. *phretr*, sons and grandsons of *phrater* (brothers), Sk. *Pravara*, had separate establishments, *phratry* (Gk. *phratris*), the sub-division of tribe, Gk. *Phyle*, Roman *curia*. Homesteads were surrounded by arable lands which were both privately owned and guarded. Dogs were kept to guard the homesteads against the intrusion of the thieves, robbers and wild animals to bark at them, and thereby rousing the inmates (7, 55). *Canis Major* was also the *Vastoshpati*—the guardian of homesteads (*bhavā-nah*: 7, 54, 1). For food and shelter a ruined gambler sought shelter at another man's house at night (\times , 34, 10). Fields (*kshetram*) were measured (*mānam*: 1, 110, 5). *Apalā Atreyi* prayed for the increase of production of his father's cultivated field (*tātasya urvārām*: 8, 80 (91), 5). But the pasture land (*gavya*, *gavyati*: 1. 25, 16; 3, 62, 16) was common to the community as is evidenced by the employment of a common

Gopa for grazing all the cattle (x, 19, 3-4). Germans have no cities or even admit of contiguous settlements. The villages are laid out in rows of adjoining buildings, but every one surrounds his home with a vacant space (18). They take their meal on a distinct seat and at a separate table (22). Heroes sleep on bear skins. Others on cow hides. Children lie together on ship-skins or hay amidst the cattle with slaves till age (12 : Tacitus : *Germania*).

The domesticated animals were dog, horse, sheep, cows, swine. Indian humped bull with lyre-shaped long horns, drooping ears and slender legs is known as *Bos Indicus*. Long-horned humped bulls frequently figure in early Assyrian sculptures and engravings. And they ploughed the fields and threshed the corn in Ancient Egypt. In the Hoggar Mountains of Central Sahara rock-engravings of ox with lyre-shaped horns have been found (I. L. N. Jan. 1, 1939). Short-horned bull has been derived from the wild ox of Europe, the Aurochs (*Bos taurus*). In Spain and Italy both long horned and short-horned breeds are found. Long-horned breed might have been introduced from Egypt and Sahara region. The long-horned humped bull might have been derived from the Javanese Banting, the elevated ridge of whose withers developed into the hump.

Meat and mead were the principal food and drink of the Aryans. Beef, mutton and pork were their favourite meat. Cattle were slaughtered in marriage feasts (x, 85, 18). Beef was cooked (x, 28, 3 : *pacha* √ *Pacha* = to cook, ripen ; *pakva phalam* = ripe fruits. Gk. *peptein* = to cook, *pap-on* = ripe. Lat. *coqu-ere* = to cook, Russ. *peche* = to bake). Puddings were made with hashed meat of buffalo and ham cooked in milk (8, 66 (77), 10). Horse meat used to be roasted on pits (*sulam*). It had fine flavour (*surabhi*). The roasted meat (*māmsa* - Lith. *miesae* - O. Sl. *meso* - Goth. *mimz*) from the oven (*ukhaya* - Lat. *auxilla*) was carried out and taken out for distribution with forks (*ankāh*). Gravy (*yusha* : √ *yas* = to ferment, seeth. Skt. *nir-yasa* = exudation. Lat. *jus* = Skt. *yusha*. Fr. *jus*, Eng. juice. Gk. *zyme* = leaven, *zomos* = broth) was sprinkled over meat (1, 162, 11-13). *Vāmadeva* (4, 18, 13) laments : "In privation I ate dog's intestine and saw my wife dishonoured

(4, 18, 18)". Soup was made by cooking together barley and meat (Supa=soup, Fr. soup=Ger. suppe. √suk—to flow, to suck, Gk. op-os=sap, juice. Lat. suc-us=juice; sug-ere—to suck. Russ. sop=juice, sos-ale—to suck; Eng. sup—to imbibe as a liquid. Skt. supa=soup. Supākāra=soup-maker, cook). Grains (dhānāḥ : of barley) were brewed and fried (bhrijjati : 4, 24, 7). Fried barley powder (Yab Kā Chātu) is still extensively used as the daily staple food in Northern India. Next to meat, milk and milk products were the principal articles of diet. Milk was known as paya. Barley or wheat boiled in milk was known as payasa. Kshira is fresh-milk boiled until it has the consistency of syrup. Dadhi is the curdled soured milk. Casein of the fresh curdled milk is called peyusha, (Av. tuirya, Gk. turos) and of soured milk, Mastu. The cream of soured milk is navanita. The boiled navanita until the greater part of its moisture is evaporated is ghrītam or sarpis. (Gk. helpos, As. sealf, Toch. salypa). The curdled milk water (whey) is called mathita; when mixed with water, it is called takru. Curdled milk was kept in leather bags (driti 6,48,8). Possibly the leather bags (driti) were shaken in order to make fermented milk or butter-milk. Honey and milk or honied sour milk were favorite drinks. Ripe fruits (pakvam phalam) were also relished (3,45,4). Hospitality to guests (attihi) was enjoined (Manu S. 4,182). The house in which a guest is entertained with grateful food is heaven (1,21,15). Raw flesh (kravyād) was no more used; it was the food of the Rāksasas (7,104,2. Gk. kreophagi and bleeding flesh—amad×87,7, Gk. omophagi; even human flesh ×87,16). But the Aryans once had been in the habit of eating raw flesh; for the Vedic Kravya, Krawis is Gk. kreas (a piece of flesh) and Lat. caro, carnis and O. Ger. hreo. The Latin cruor, and O. Sl. kruvi coming from the same root, means bleeding. Meat was cooked in a pottery vessel caru with a cover apidhana (1,162,13). Copper or iron kettle (ayasmayas) was also used (5,30,15). Though guest was called goghna, the cow-eater, for a cattle was killed in honour of the guest, Jamadagni identified go with Aditi, the limitless expanse of the heaven (8,90(101),15. and thus became not-injurable and non-killable (aghna). The motive behind it was perhaps that

the cow was a very useful animal. Its milk was food and medicine to the young, old and the invalids. Like mother's milk, it was nourishing; for the same reason the Greeks and Romans did not eat the meat of plough-oxen; the ancient Britishers did not eat ducks, chickens (for they ate on refuge matters and thus were cleansing agents) and hares (Carnoy: *Indo-Europeans* P. 118). *Surā* (3,2,12) was brewed from barley grains. *Sura* (beer), gambling and anger (*manyu*) lead men astray (7,86,6). *Madhu* is a pleasant drink (*svado pito madu*: 1,187,1. *Madu* (honey; *madhuka*=bee), derived from √ *Mad*=to flow. Skt. *mad*=to be wet, to be drunk; *madya*=intoxicating liquor. Lat. *madere*=to be wet=Av. *madu*=O. Bulg. *medu*=Lith. *medus* (honey), *midus*=Lett. *medus*=O. Pr. *meddo*=Gk. *methu* (methe=intoxication)=O. Ger. *meto*=Ice. *miqdr*=Dutch *mede*=Welsh *medd*=O. Ir. *mid*=An. Sax. *medu*=mead. Lat. *mel*=Gk. *melit* (melissa=bee)=Alb. *mjai*=Goth. *milip*=An. Sax. *milise*, *mildeaw*=Corn. *mel*=O. Ir. *mil*=Ar. *melr*=Fr. *miel*=honey. √ *svad*=to be pleasant. Skt. *svada*=Gk. *edus*, Lat. *suavis*, Goth. *suts*, As. *swet-e*=sweet. Aryans did not know the use of salt (sodium chloride) Meat-eaters need it very little. But the vegetarians require it badly to supplement it in their food. It is only mentioned in Av. 7,76,1 and not in Rik-veda. Occasionally fish was taken, particularly tasty **Eel**, Teut. *agla*, Gk. *ekhis*, *egkelys*, Lat. *anguis*, Lith. *unguris*=Skt. *andh-ahi* (Ts. 5,7,17). *Andhāhi* (eel) was originally derived from blind, that is, non-poisonous snake like (*Anguella vulgaris*). **Salmon** was called Lith. *lasziwa*, O. H. Ger. *laks*, Toch. *laks*, Celt. *esoks*. Scally fish was known Skt. *s-lki*. **Tortoise** was called Skt. *kasyapa*, Gk. *kelys*, O. Sl. *zely*. Their (of the Germans) food is wild fruits fresh version and cheese (Tacit. *Germ.* 23). Hospitality is obligatory. To refuse any person whatever admittance under their roof is regarded flagitious. Everyone according to his ability feasts his guest. When his provisions are exhausted, he, who was formerly the host, is now the guide and companion to another hospitable board. They enter the next house uninvited and are received with equal cordiality. No one makes any distinction with respect to the regards of hospitality between a stranger and an acquaintance (Tacit. *Germ.* 21).

Joint family is indicated by the following hymn (Av. 3, 30). Be of the same heart and mind without malice to each other. Show affection to each other as the cow (aghnā) to her new-born calf (Av. 3, 30, 1). Let the son be obedient to the father and be the same to the mother. Let the wife speak pleasant and harmonious words to her husband (2). Let not brother hate brother, not sister (hate) sister. Being of the same intention let them speak (to each other) courteously (bhadrayā : 3). Having superiors, be not divided in your objective. Accomplish your goal with your joint labor. Speak pleasantly to each other. And be united with a common purpose (5). Let your drink and food be common. And joined in the same harness, worship Agni unitedly like spokes about a nave (6). Unitedly be of the same purpose. Be reconciled to each other like gods defending wine (amrita). In the morning and evening (always) be mutually inclined (Av. 3, 30, 1-7). According to Tacitus (*Germania* 31), among the Catti (possibly a variation of Getæ of Caspian origin ; Saka tribe Kathi after whom Kathiwar has been named ; Katha of Yajurveda ; Khatti) from the time they arrive at years of maturity they let the hair and beard grow, and do not divest themselves of the badge—the promise of valor—till they have slain an enemy. The bravest among them wear also an iron ring till they have released themselves by the slaughter of a foe (compare this custom of having uncut hair and beard and putting an iron ring on the wrist with that of the Sikhs who are generally recruited from the Jats, also of the Getæ descent). The Swevi (living on the Elbe and the Vistula, the Baltic Sea and the Danube) even till they are old, continue to have their hair growing stiffly backwards, and often it is fastened on the very crown of the head. Among Suevi and also the rest of the Germans, the slaves were shaven, or at least their hair was cropped so short that they could not twist or tie up their hair in a knot (Tacit. *Germ.* 38).

Dress.—Vasana (1, 95, 7), vastra (1, 26, 1) = Av. vanhana, vanh—Lat. vestis, vestio—Gk. esthos, eima=Goth. ga-vas-jan=Eng. vestment from √vas=to cover, to envelop. The German children used to remain naked (Skt. nagna, Lat. nudus, Lith. nugas, O. Sl. nagu, Goth. nacket, Ger. nackt. ✓)

Nag = to lay bare. Skt. nag = to be ashamed) up to their puberty. The Parsis still have the ceremony of wearing a *girdle* dress (Kushti-Lith. josta, Russ. poias, Gk. zoster, Ger. gurtel, As. gyrdel. $\sqrt{\text{yas}}$ = to girt. Skt. Kāncipada = mons veneris, pubic region. Kānci, Gk. zone = girdle), an ancient custom, to cover their sexual parts at the time of their adolescence, either with grass, leaves or leather sashes. "I bind thee with my nature-born garment (Vāsasā) that thou mayest be wholly mine and not think of other women (Av. 7, 37, 1). According to Manu 5 (2, 41) at the Upanayana ceremony which takes place at the time of puberty, the girdle should consist of three strings of *munja* grass and the upper garment (uttariyas) of the skins of the antelope, Ruru (a species of deer) or goat. In Greece even maidens had to take initiation, which later as among us was replaced and identified with marriage ceremony. Skt. Carma (skin or hide) is derived from $\sqrt{\text{Sku}}$ to cover. Gk. ku-tas, Lat. cu-tis = skin. Gk. skey-e = clothing, Lat. scutum = shield. An embossed nude figurine with prominent breasts but wearing a girdle on her loins on a gold leaf, possibly of the Mother Goddess, has been found in the ancient burial ground at Laurya near Nandangarh. Pressed linen fibres came perhaps later in use. Among the Hindus the linen *sari* (ksuma); painted red, is used as the auspicious wear at the marriage ceremony of the newly-married bride. Matted wool pressed together was made into felt (Gk. pilos, Lat. pileus, Ger. filz $\sqrt{\text{Prak}}$ = to plait, weave, fold together. Skt. pitaka = a plaited basket; tri-pitakas = three baskets or books of the Buddhists. Gk. plok-e = a plait; plek-ein = Lat. plectere = to plait. Goth. fal-than = to fold, and used as a blanket as well as a garment against cold. Marut had felt (etah) on his shoulder (1, 66, 10). Wool (Skt. urna = Gk. er-iron, eir-os = wool = Lat. uel-lus = Lith. wilna = O. Sl. vluna = Goth. willa = Ger. wolle) spindle (Skt. tarku = Gk. arraktas) was spun (Skt. nivi = spun into an apron, a girdle sash; Gk. neo = Lat. neo, nevi = to spin. $\sqrt{\text{spa}}$ = to draw out, to stretch. Skt. sphay = to swell, sphu-rana = increase with swelling; sphurti = pleasure. Gk. spa-ein = to draw. Lat. spa-tium = space. As. spin-nan = to spin) into threads (Skt. tantu = Av. tan = Gk. tein-o = Lat. tando, tentum from $\sqrt{\text{Tan}}$ = to stretch, tanu = thin, tan-tu = thread. Gk. teinein

-to stretch, ton-os=tension, tone. Lat. ten-dare=to stretch. Goth. than-jan=to stretch out) which were woven (\sqrt{va} =to weave; Vaya (x, 26, 6=weaver, urna-vabhis=wool-weaver, i.e. spider=Lith. wo-ras, Gk. yphe, yphos=web, yph-ani-ein=to weave. Ger. weben=As. wef-an=to weave) into Vastras. Tasara is weaver's shuttle (x, 130, 2). Tantun is the warp—the lengthwise threads in the loom, and otum is the woof, the threads that cross the warp and carried by the shuttle (tasara) and this is weaving (vayanti: 6, 90, 2). Moyukas or wooden pegs (x, 130, 2) or leaden weights were used to stretch the web (Vs. 19, 80). The loom was called veman (Vs. 19, 83). Ushas and Naktā (the Dawn and Night) are like two dexterous female weavers (vayyeva), weaving day and night (2, 3, 6). Paridhāna was possibly dyed garment (Av. 8, 2, 16), and pesas (1, 92, 4) was the embroidered garment worn by the danseuses (nritu). Garments and coats of armour were sewn (sivya: x, 101, 8. Skt. Siv=Lat. suere=Lith. suti=Russ. shite=Goth. sunjan=to sew \sqrt{from} Siv—to sew, stich together; Skt. Sutra=thread)—Gauriviti Atreya (5, 29, 15) says: Indra, accept the prayers which are now offered: the new ones (prayers), O mightiest, which we have made for thee, like an elegant (bhadra) well-made (sukritā) garment (vastra) as a clever carpenter makes a chariot (5, 29, 15)". Wife puts on good dresses (suvāsāh) for her husband (4, 3, 2). And wives being accustomed to use suvāsa, suvāsa meant wife (1, 85, 1). Samulyam (x, 85, 29) is regarded by some as a woolen shirt and by others as a dirty garment which is asked to be given away on the marriage festival. Atka (9, 69, 4-5) is woven woolen piece through which soma paste was sieved through, the Avestan adhka. Leather Sandal (upānaha) was used (Ts. 4, 4, 4.; Sat. Br. 5, 4, 3, 19; Manu 4, 66, 74). Hair was combed with a hundred toothed Kankata (possibly made of bone: Av. 14, 2, 68) and dressed with a salve (amji: 1, 64, 4). Uncombed and undressed hair was a sign of mourning (Av. 11, 9, 14). Women had their hair plaited (stu). Indrani was called prithushta, having broad hair-plaits, which was a distinguished sign of beauty with ample hips (prithu jāghana), lovely arms (subhāhu) and fine fingers (svāngure: x, 86, 8). Hair locks and plaits were kept in their proper place by a thin ribbon like band (ushnisha Av. 15, 2, 1). Women

dressed their plaited locks of hair on their head in the shape of water-jar (*Kumbha*) or *Kurira* (coitus symbols = linga and yoni shaped : Av. 6, 138, 3). Bride used to dress her hair in the *Kurira* fashion (10, 85, 8). Men used to have pig-tails and tie on the crown of the head, opasa (1, 173, 6 ; Av. 6, 138, 1-2 ; Vs. 11, 56) as the German Suevi used to do (Tacit *Germ.* 38). We also find that the Vasishtas had their plaited locks in the right side (*dokshinatas-kaparda* : 7, 33). The kings and the priests of the Vandal Astengi used to dress their hair likewise (Grimm *Deutsche Myth.* P. 317). Rudra (1, 114, 1, 5) and Pushan (6, 55, 2) were also called Kapardin. The Khattis used to wear pig-tails (11 E.B. Hittites ; Maspero—*The Struggle of Nations*). The Germans according to Tacitus (*Germania* 17) used the dress of skins of animal for their clothing, fastened by a clasp or in want of that a thorn. The Aryan women used earrings, bracelets, necklaces as ornaments. While tattooing was the fashion with the Caspian women. Beard was usually kept. Indra went to wars, holding his *Vajra* (mace) in his right hand and waving his beard (x, 23, 1). Agni devoured the forest of the hills and dales, when fanned by wind as a barber (vaptar) shaves head (*Smasru* : x, 142, 4). The razor is called *Kshura*, Gk. *Ksuron* (8, 4, 16). The head and beard are at first lathered (*undantu*) with hot water (*ushna udaka*) and then shaved with *Khura*, razor (Av. 6, 68, 1-3). The beard of a dead man was also shaved (Av. 5, 19, 14). Aryans used to have a strong twig in their hands as a staff (Skt. *Sthapana* = Lith. *stebas* ; Goth. *stafs*).

Arms.—*Asani* (1, 143, 5) is the thunder-bolt of Indra. *Asan* (4, 28, 5) is a piece of stone. *Asani* is derived from *Asan*, which therefore means a stone club. *Asman* is (2, 30, 5) a stone chip, a thunderbolt. *Asman* in Iranian means the sky for they thought that the sky was a stone vault. *Asman* = Gk. *akmon* (a stone anvil, a thunderbolt) — Lith. *akmu* (stone) = O. Sl. *kameni* — Russ. *kamene* — hammer, a stone anvil. Thor's hammer is a piece of stone anvil. Thor is the Teutonic Indra. ✓ *Ak* = to pierce. *Asani* — chipped stone. Gk. *ak ros* — pointed, *ak-one* = whet-stone, *ak-on* — javelin, *ak-me* — edge. Lat. *ac-us* = needle. *Khatti* and *Mitanni Teshub* (*Kesaba*) wielded a heavy club in his hand. Iranian *Mithra* who combined in him many of the characteristics of Indra was armed with a brazen club having

hundred knots, the strongest of all weapons, the most victorious of all weapons (*Mihir Yast* 96). According to Tacitus (*Germ.* 45) the Germans were armed with a club made out of bent hard oak wood. From this stone, later brass and finally the wooden club, the mace and sceptre have developed into symbols of power and authority. Saxons were named by the Romans, for they used to sling stones (*saxum*) at them. Sling stone was *asani* (6, 6, 5; adri: 1, 51, 3) = Av. *asan* = Gk. *akon*. It was later known *bhusundi* (*Drona P. Ch.* 177), and the sling stones were thrown to the enemy by the rapid movement of short leather straps, two thongs fastened to the ends and the stones are hurled by centrifugal force. *Arvata* (1, 8, 2) was the cavalry. Indra was a cavalry man (8, 40, 2). But in 1, 116, 17 it seems that Surya Duhita ascended Asvins' car and not steed. The warrior was clad in leather *Varman* (Av. *Vareman* = Lat. *arm-ari-um*, from *armare*—to cover the shoulder with leather as a defensive measure—armour: 1, 31, 15). Whether metallic armour was only metaphorically used as the shining armour of war (*varmeva yutsu pari-jarbhuranah*) of Agni (1, 40, 10), the golden helmets of Maruts (5, 54, 11) or the feet shield (*vaturina pada*) of Indra (1, 133, 2) or not is questionable. Helmet = *sipra*. But when *Varma* is sewn, (x, 101, 8), it certainly cannot be of metal, but possibly of leather. In the Avesta we find that Mithra is a warrior on a white horse, with a sharp spear, the long spear, the quick arrows, with a silver helmet and a golden cuirass (*Mihir Yast*, 102, 112). "The Germans covered themselves with the skins of wild animals, wearing on their heads those of the bear, the horned buffalo or the antlered stag, whence arose the custom of placing horns, wings and other symbols on iron helmets and escutcheons. Sidonius says of the Germans; Death alone subdues them, not fear; they threaten even in death: their courage survives them. According to Labinus, they sat down in their meals in full armour and slept helmeted (W. Menzel: *Germany* Vol. 1. P. 25-28). *Ratha* (1, 58, 3) is the war chariot of the Aryans. When yoked to good steeds, with a clever charioteer (*rathin*, *sarathi*, *ratheshkitha* (1, 11, 1) = Av. *rathaesteo*, *rathaestare*) and archer, *ratha* ($\sqrt{\text{Ra}}$ = to rotate Lat. *ra-tas* = a wheel, *ra-tis* = a ship, *ro-tare* = to rotate, Cel. *roth*, Lith. *ra-tos*, Ger. *ra-d* = a wheel, *Ratha* = a car moving on wheels) was a

powerful instrument of offence. *Aksha* (3, 53, 17) is the axle on which the wheel of the car rotates √Ag. ak=to drive. Gk. ag-ein=to drive, ak-son=an axle. Lat. ag-ere=to drive, axis-Lith. aszis=Lat. axis=Gk. axon=O. Ger. ahsa=Ger. achse=Eng. axle. *Nabhi* (1, 164, 48) is the navel, the nave, the central portion or hub of a wheel through which the axle passes. √Nabh=to swell. Skt. nabh-as=the sky. Gk. neph-as=cloud, ornph-alos=navel, bos of a shield. Lat. nubes, nimbus=cloud, umb ilicus=navel; umbo=a boss. As. naf a=nave of a wheel; ela=nafu; Ger. nabe, nave, Pruss. is Or. nombril. navel *Cakra*=kar=to curve, is a wheel, circle; kri-mi=a worm. Gk. kyl-los=bent, kyl-os=a circle, kyl-indros=a cylinder, kri-kos=a ring. Lat. cir-cus=a circle, cur-nus=bent. Russ. kri-vite=to bend, krug=a circle, koleso=a wheel. As. hweol, hring=ring, O. Sl. kolo=a wheel. *Yuga* (3, 53, 17) is the yoke, a frame of wood joining oxen or horses for drawing, from -yug=to join. Skt. yuga, yugala=Gk. zugon-Lith. jungas=Lat. jugum=Goth. juk=Ger. Joch=Russ. igo=a yoke, pair, couple. *Yok-tra* (3, 33, 13) is the leather thong used for yoking the chariot. *Dhanvāna* wins for us the kine. With *Dhanavāna* we win battle. With *Dhānvāna* we become victors in hot encounters. *Dhanu* brings misery to the enemy. With *Dhanvāna* may we subdue all regions (6, 75, 2). Archery was the main offensive weapon of the Aryans. Riding on fleet horse or speedy chariot, archers could attack the enemy from distance. *Dhanvan* (Av. thanvare) is from √Dhan=to strike. Skt. *Dhanu*=bow. Gk. thein ein=to strike. Lat. of fendere=to strike, hurt. √Bhuj=to bow, bend. Skt. bhuja=arm, for it is bent; bhujanga=serpant which is coiled. Gk. phyg-e=flight. Lat. fug-a=flight; AS. bu-gan=to bend, boga=a bow, Ger. bogen=a bow. *Dhanurvāna*, the bow, has possibly originated from the above roots. *Jya*=Av. jya=Gk. bias is the bow-string, made of ox-hide (6, 73, 3). *Ishu*=Av. isu=Gk. ios was the arrow shaft that was tipped with deer horn, or iron, and often smeared with poison (6, 75, 15). The Scythians used to dip their arrow heads in decomposed blood or snake venom in order to make the wound mortal. The primitive tribes, still use strychnine and aconite to poison the wounds, or drinking water. *Saru* (1, 172, 2)—the spear is the Teut. hairus (sword). Skt. asi=Lat. eusis and Gk.

aks ine = sword. Skt. Sastra = Gk. *kestos* = javelin ; Skt. *Parasu* = Gk. *pelekys* = Assy. *pillaku* = axe. Bronze double axe was sacred to the Mycenaeans (a branch of the Caspian) Spear (*strakti* ; 7, 18, 17) ; lance (*strika* : 1, 32, 12) ; missile (*didyu* : 1, 71, 5). *Senā*, Av. *haena*, is army.

Sports and Plays—Hunting has been the favourite sport of the Aryans; Primitive man depended on hunting and fishing for the supply of animal food. Later hunting is accessory to agriculture, provides variety in the monotonous vegetable diet or is required to protect flocks and herds against predatory beasts ; and since then it has been surviving as a sport for the powerful people. Primitive agriculture has been and is still the work of women. While men are hunters. They hunt by traps, snares, nets, wooden clubs and bone-tipped spears. Hunting was known, as *mrigaya* (8, 2, 6). *Mriga* was any wild animal—Av. *meregha*—and later deer. *Mriga bhima* is terrible animal, that is lion (1, 190, 3). *Mriga mahisha* is buffalo (9, 92, 6). *Mriga hasti* is the animal with hand (prehensile proboscis), that is the elephant. √*Marg* = to stroke, to milk, to seize. Skt. *mriga* = to stroke, *mārga* = a trace, *mriga* = a wild animal, deer, *mriga-yā* = seizing by chase. Gk. *marp-tein* = to seize ; a-melg-ein = to milk. Lat. *mulc-ere* = to stroke, *mulg-ere* = to milk ; *marg-o* = a boundary. Lith. *milszti* = to stroke, milk. Ger. *melken* = to milk ; *mark* = boundary. As. *meolk* = milk, *mearc* = boundary. Skt. *kheta* = hunt, from √*kad* = to fall. Skt. *cataya* = to fell, to drive. Lat. *cad-ere* = to fall, *ced-ere* = to go away. Ger. *hetzen* = to hunt, to bait. A snared lion (*simha*) leaves the trap that caught him (X, 28, 10). A lion is trapped, ambushed and captured (5, 74, 4). An antelope was ambushed into a pit (X, 39, 8 : pits are dug and their surface is covered with leafy branches of trees. When, the bushes are beaten the animals while running to escape fall into these hidden pits, and there speared through or clubbed to death). Buffaloes rush furiously when wounded by arrows (X, 51, 6). Elephants are also trapped (X, 40, 4). A hound (a hunting dog) captures a boar (*varaha*) by biting him in his ear (X, 86, 4). "Let not the falcon kill thee or the eagle (O *Kapinjala* = partridge). Be thou beyond the arrow shots of a heroic archer (2, 42, 2). Games were caught by shooting through arrows (2, 42, 2), traps (*pāsa* : 3, 45, 1),

noose (nidha = 9, 88, 4), nets (jala : Av. X, 30), pits (X. 28, 10) and hounds (X, 86, 4).

Horse and Chariot Race.—Horse Race (*Vāja-peya*) was popular. Successful horses in the races won prizes. O Soma, give us power and strength as a winning horse gets prizes in the race (9, 109, 10). There were regular race courses (7, 103, 3) where horses enter for competition. The conquering courser reaches its goal (9, 74, 8). The coursers, who have triumphed in the contest, have become famous, or have won prizes, are praised with songs (X, 74, 1). "O steeds, hasten for the prize; attain the goal. For each prize, drink of this mead and rejoice in it. This steed speedeth his swift course, bound at the neck, shoulder and the mouth. Displaying his strength, *Dadhikra* springeth along the bends of the ways. After him as he hastens in triumphant speed blows the wind as after bird's wings (Vs. 1, 7, 8). Chariot race (9, 91, 1) was also very popular and highly contested. "O Indra, help our chariot on, yea, thunderer, though it lags behind. Give my car the foremost place. Make thou my chariot to be first and bring the fame of victory near. Help our car that seeks the prize. And make us victorious. Do not disgrace us. Broad is the race-course (*kasthā*). The prize is announced. The barriers are opened wide (8, 69 (80), 4—8).

Numerals.—Skt. eka = Khatti aika, Av. aeva, Gk. eis, Lat. unus, Goth. ains, Lith. venas, Toch. som, Cel. oen = Eng. one. Skt. dva, Gk. dwo, Lat. duo, Cel. dau, Lith. du, dvi, Goth. twai = Eng. two. Skt. trayah = Kh. teras, Gk. treis, Lat. tres, Cel. tri, Goth. tries, Lith. trys, Toch. trai = Eng. three. Skt. catvarah = Gk. tessares, Lat. quattuor, Cel. cethir, Goth. fidwar, Lith. keturi, Toch. stwer. Skt. panca = Kh. panza, Gk. pente, Lat. quinque, Cel. coic, Goth. fimf, Lith. penki, Toch. pis = Eng. five. Skt. Sat = Gk. hex, Lat. sex, Cel. se, Goth. saih, Lith. szezi, Toch. skas = Eng. six. Skt. sapta = Kh. satta, Gk. hepta, Lat. septem, Cel. secht, Goth. sibun, Lith. septini, Toch. sukt = Eng. seven. Skt. astan = Gk. hocto, Lat. octo, Cel. ocht, Goth. ahtan, Lith. asztuni, Toch. okt = Eng. eight. Skt. nava = Kh. nāv, Gk. hennea, Lat. novem, Cel. noi, Goth. nium, Lith. devyni, Toch. nu = Eng. nine. Skt. dasa = Gk. deka, Lat. decem, Cel. deich, Goth. taihun, Toch. Sak. Skt. satam = Gk. hekaton, Lat. centum, Cel. cet, Goth. hund, Lith. szimtas, Toch. kante.

In calculations the Aryans used multiples by 10 (decimal system), while Babylonians used multiples by 4, as 12, 16, 60, 64.

Dancing and Music.—Dancing (*nritya*) was very popular. It was usually accompanied by music. Sankushka, an Alpine says : "Let us have dances (*nritya*) and merriments (*hasaya*) which prolong life (X, 18, 3). Of course the Alpines have always been joy-loving, light-hearted cheerful people. That the poet is Alpine is proved by the fact that in the same hymn (X, 18, 10) earth burial is described, which was an Alpine custom (burial in round burrows), while the Aryans burned their dead. No doubt dancing is an excellent joyous playful amusement. The co-ordinated bodily movements in rhythmic undulatory waves enhance metabolism, stimulate emotion and imagination, stir up sexual erethism, bring forth self-poise, balance, sense of beauty and harmony. Dancing therefore is a sport, play and art—all combined. But it originated as a form of religious worship to please gods, especially of fertility deities. Dancing in the beginning was a pantomime sexual act. By its sensuous and voluptuous appeals it pleased gods and spectators. It was associated with the worship of Egy. Osiris and Isis, Baby. Baal and Ishtar, Greek Dionysus (god of vine and drinking = Soma) and Aphrodite, Roman Venus and Flora, Khatti Teshub and Mā. Hindu Siva and Pārvati. Frenzied dancing was usually followed by sexual orgies. The Bacchanlic women followers of Dionysus were chiefly Maenades (Macedonians = Caspians) and Bassaræ (Bessi = Alpine), both of Thrace where the cult. originated. Later dancing developed into bodily flexible rhythmic motion which added health and beauty to their physical forms, joy and charm, art and sociability to their mind. Children born in temple precincts where women went to get relief from labour pains were usually dedicated to deities. Males were trained to be state soldiers and priests; and females as priestesses. And it was thought that gods were pleased not only by prayers and food-offerings, but also by dances and sexual acts. Thus gradually priestesses degenerated into Sādhārani (I, 167, 4 : Sādhārani—for all people, later an expression for prostitute): Far off the brilliant never-weary Maruts embraced the youthful Sādhārani I, 167, 4), Nagnā (courtesan : Av. 5, 7, 8) and Mahānagni (Av. 20, 136, 5).

The prettiest damsel among the Licchavis was not allowed to get married. She was made a courtesan for enjoyment of all. This dedication of damsels to deities was known as *atisarga* (Yaska's Nirukta 2. 4). Religious prostitution in the guises of priestesses was common in Egypt, Syria, Anatolia, Phrygia, Sparta, Corinth, Athens and Hindu temples. But Solon (639-559 B. C.) formally established houses of prostitution at Athens and filled them with female slaves—called *Dicteria*—and bought with public money and bound by law to satisfy the demands of all who visited them. They were real civic *sadhāranis*. But that needs civic organization and discipline which is not indicated by the Vedic hymns. The Greek female flute players *Auletrides* in the beginning danced combined with flute-playing in the temples of Demeter, Pan and Aphrodite. Later they privately entertained rich people at their banquets. Their services were hired and highly appreciated. They sold their charms to opulent bidders. She (Ushā) wears the embroidered cloth of *danseuse*, and like the udder of a cow she bares her breasts (1, 92, 4). In the Mahavrata Day Ceremony (winter solstice, for the fertilization of the earth and for the sun to regain strength to advance northward), slave girls dance round the *Māṛjalya* fire with water pots on their heads, beating the ground with their feet, and singing: this is the honey and honey is the best food of the gods (Ts. 7,5,9). At the marriage ceremony "after they have regaled 4 or 8 women, who are not widows with lumps of vegetables, *surā* and food, these (as a fertility magic) should perform a dance four times (*Sank. Grihya* S. 1, 11, 5). *Dundhubi* (drum—percussion instrument), *tunava* (flute—wind instrument; Lat. *tonum* = a sound: Gk. *tonus* = the sound of a stretched string, Eng. *tune* √ *Tan* = to stretch) and *Vinā* (lyre—stringed vibration instrument) notes usually accompanied dancing. From dancing *Nrit*, dancing goddess was known as *Nritu* (1, 96, 4; x, 18, 37), Germanic *Nerthus*, later known as an Earth Deity.

GAMBLING.—Dice playing and gambling became inveterate vice with the Aryans. In this vicious game they pawned their possessions, home, land, wife, children, even their own personal freedom. Nala pawned his own beloved wife *Damayanti*. Yudisthira pawned his kingdom, brothers, himself

and their common wife Draupadi. Kavasha Ailusha pathetically describes the gambling craze and its pathetic consequences:—
 "When I see the big dice lying on the playing board, I become excited as if drunk with Soma beverage of Majuvan Mount (×, 34, 1). When one becomes addicted to gambling, other people enjoy his wife. Even the father, mother, seeing him in debt says to the creditor: we do not know him. You can bind him and take him as a slave (4). I often think in my mind that I shall not in future play dice. I shall live away from the gambling den, and will not mix with those game mates. But when I hear or see that the dice are lying on the playing board, I cannot resist any longer. I rush to the gambling place as a maiden breathlessly goes to her lover (5). To the victor the dice are dear like his children. But it impoverishes the loser (7). His wife becomes disconsolate with grief and poverty. His mother becomes nervous with anxiety for her son. In debt and misery, and for securing further loans, he spends nights in other people's houses. When he sees other women happy in their homes, it rends his heart, thinking of his wife's sad pathetic condition. Like a horse he may wander here and there in day time, but at nightfall, like the underworld on the roadside fire from the creeping cold he keeps his body warm (×, 34, 10-11). The Germans play at dice as a serious business and with such a desperate venture of gain or loss that when everything is gone they set their liberties and person on the last throw. The loser goes into voluntary servitude and patiently suffers himself to be bound and sold. Such is their obstinacy in a bad practice, they themselves call it honour (Tacit. *Germania*, 24). Dice found at Mohenjodaro.

Professions.—Various are our plans and diverse are our occupations. The carpenters (*takshā*) seek the broken (pieces for repair); the physician (*blishag*) the sick; the prayer makers (*brahmā*); brahman=prayer: 1, 10, 4; brahma-kara=prayer maker: 6. 29, 4; brahma-krit=prayer-fulfilling, 3, 32, 2; brahmans-pati=Brihaspati=lord of prayer, 7, 41, 1. √Bhram=to hum. Skt. bhramara=the humming insect—the bumble bee; brahman=one who prays in a murmuring tone as usually the priests do. Lat. frem-ere=to murmur. Gk. phormigr—the tune of lyre. Lat. farcinio, premo, Gk. phar-makon—to

strengthen ; and brahmna might have developed from the same root, meaning which (prayer) sustains and supports ; 9, 112, 17) sacrificers ; with hard seasoned wood, with feather broom to enkindle the glowing forge, the smith (*kārmāra*) with anvil is seeking those who have stocks of gold (to make ornaments : 2). A poet (*Kārur*) I am. Dad (*tāta*) a physician ; Mamma (*nanā*) is a flour miller of millstones. In different ways for wealth we follow our desires like kine (3) (The next verse seems to be a later addition). Horse desires (to draw) an easy (*sukam*) vehicle (*rathan*) ; under-secretaries (*Upa-mantrinah*) who have very little work and responsibility wish to beguile their time by idle talks and), jests (*hasanām*). The penis (*sepa* = $\sqrt{\text{Su}}$ -to generate : *Sepa* = penis, *Sunus* = son. Gk. *hios* = Lith. *sunus* = Russ. *suinu* Goth. *sunus* = Ger. *sohn* = son, longs for) hairy (*romanivantam*) cleft (*bhedan* = vulva) ; water the frog (*manduka* : 9, 11, 1-4) - *Sisu Angirasa*. The chariot builder (*rathakāra*) could make chariots (*rathan*) where eight friends (*ashta vandhu*) could be accomodated (\times , 53, 7). *Indrāni* complains that deftly wrought delightful (*priya* $\sqrt{\text{Pri}}$ = to love. Skt. *pṛiti* = affection, *priya* = dear, *prema* = love ; Lith. *pre-tellus*, -Russ. *prii-atale* = Goth. *frijonds* = Ger. *freund* = friend. Swed. *frande* = a kinsman. Goth. *fri-jon*, As. *fri-gu* = to love) wooden work (*vyakta tashtani*) was spoilt by Kapi—monkey (\times , 86, 5). *Carmamna* (8, 55, 3), *Carmanla* (8, 5, 38. $\sqrt{\text{Sku}}$ = to cover. Skt. *carman* = skin, leather. Gk. *skeye* = clothing ; *ku-tos* = skin. Lat. *cu-tis* = skin, *scu-tum* = a shield. As *hy-d* = hide, skin) is the tanner of leather. Tanning (*mā, mnā*) and certain details of stretching (*Sat. Br.* 2, 1, 1, 9), wetting (1, 85, 5) hides refer to the process of manufacture. The leather thong (*yoktra* : 3, 38, 13) was used for yoking the chariot. The bow string (*Jya* : 6, 75, 3) was made of oxhide. Leather bags (*dṛiti* : 1, 191, 10) were used for holding curdled milk, beer and soup. The shields were made of ox hide. Cuirass and breast plates were made of leather. The body armour was made of leather and bronze plates. Sinews were used to bind the feathers upon the arrow, and the sword was sheathed in leather. The chariots were protected with shields of leather. The box of the chariot was fixed to the axle with thongs of leather (6, 47, 26). The horses were yoked to the pole of the chariot with

leather straps and the reins were of leather. Sometimes the horses were even covered with leather robes to serve the purpose of armour. Drums were made with leather heads. So the tanner was an important profession in ancient times. Awl (ārā, Lith. yla, O. Ger. ala) is a pointed bronze to pierce holes in leather. Smith (*Karmara*) produces goods with blast and smelting (x, 72, 2). Smelter (*dhmatri*) fans the forge from which smokes (*dhuminah* √Dhu—to agitate, fan into flame. Skt. dhuma=smoke; dhuli=dust. Gk. thy-ein=to rush; thy-os=incense, Lat fu-mus=smoke. As. du-st=dust) curl up, and the smelter on the anvil puts the metal into shape (5, 9, 5). Sādhārani was a public prostitute who served the sexual needs of those who could not procure wife and for those who craved for varieties of experience. Vesyā were those who for gaudy dress (vesa) sold their physical charms. Jahi—the prostitute—dangerous to health and mind (Farg. 18, 62). Grāhi—the sexual excesses in union with a prostitute, brings consumption (x, 161, 1). **Sabhā**—Sabhā was the deliberate clannish assembly (Ger. sippe=kinsmen; Goth Sibja=Anglo. Sax. Sib) possibly originating among the Sabins and Sueves. It is the Latin septun (Eng. sept, later sect) which means fence and inclosure (Gotra), containing a number of Janas with their slaves. Sabhā later meant any assembly of people, and even the gambling board (x, 84, 6). Village (grāma) assembly is indicated by Sabhā (Vs. 3, 45). It seems later that the rich and influential patriarchs of families had right of deciding the policy of peace or war or to devise means of preserving internal order and discipline. People of fine appearance (su-rupa √Ruk, Luk=to shine. Skt. ruk, ruci=light; rupa=bright, rupya=white, for which silver is called rupya. Rupee=silver coin; rajani=moon-lit night. Gk. leuk-os=white; lyk-nos=lamp. Lat. luc-ere=to shine; lu-na (for luc-na)=moon. Goth liuh, As. leoh-l=light) rich, in horses, chariots and kine, followers (sakhā: √Sak=to follow. Skt. sakhi=a female companion; sakhya=friendship. Lat. sequi—to follow; soc-itus=companion. Lith. sek-ti=to follow. Gk. hepetes=attendant) of Indra, go to the sabhā to the delight of all (8, 4, 9). "All friends rejoice in the friend who comes triumphantly with fame and success from the Sabhā. All his defects

are overlooked. He becomes a food provider, and he is again eager for victory in another competition (\times , 71, 10). It seems that success in Sabhā as in modern representative institutions, possibly through persuasive oratory, not only brought fame and nepotism, but also position and wealth. Eloquence of speech may not be seen or perceived by every one. But to a decerner, *Vak* (speech) reveals her beauty as a well-dressed ardent wife to her husband (\times , 71, 4). Soma grants (to his worshipper) a cow, a fleet steed, an active son, skilled in housework, sacrifice and in sabhā and who brings glory to his fathers (1, 91, 20). "Let both the assembly (*sabhā*) and meeting (*samiti*), the daughters of Prajāpati, be favourable to me. Let every one of those gatherings respect and aid (vote for) me. May I deliver instructive and eloquent speeches, O Fathers, at those meetings (Av. 7, 12, 1). We know thy name O *Sabhā*; thy name is a debating exchange (*naristā*). Let all the members of the *Sabhā* give me their accordance (2). Among the assemblage, make me the leader and the expert. And Indra, make me conspicuous in the whole conference (*Sam-sadā*: Av. 7, 12, 1-3). *Sabhā* was the deliberate assembly of well-born (*su-jātā*: 7, 1, 4) influential patriarchs, (nobles) while *Samiti* was the Congress of all adult men of martial age. $\sqrt{\text{Sam.}}$ = Goth. *samā* = Lat. *simul* = Russ. *samuii* = Gk. *omos* = same. Gk. *hema*, Lat. *sim-ul* = together. *Samiti* = meeting together of friendly warriors. Lat. *mutu-us* = mutual. Goth. *mis-so* = reciprocally. $\sqrt{\text{sad}}$ = to sit. Gk. *hezomai* — I sit. Lat. *sed-ere* = to sit. Lith. *sedeti*, Russ. *sidiēte* = Ger. *sitzen* = to sit. *Sam-sad* = meeting together of sitters — a conference of delegates. *Upa-ni-sad* = to sit down near to another to acquire esoteric knowledge. *Sam-hitā* — a collection of useful things). Go together and vote unanimously. Let your minds be of accord, as the ancient gods peacefully sit down in their appointed places (\times , 191, 2). This council (mantra $\sqrt{\text{Man}}$ = to think. Skt. *man-as* = mind; *mati* = thought. *mi-mamsā* = speculation; *mantr-am* = counsel. Lat. *mens*, *men-tis* = thought; *Min-erva* = who thinks = the goddess of wisdom. Gk. *men-os* = intellectual ardour; *metis* = wisdom; *man-ia* = mental excitement; *mantis* = inspiration. Lith. *minate* = to think; *isz-mintis* = intelligence. Ger. *muth* = courage. As. *mod* = mood) is equally open to all. This *Samiti* is common

to all. So let your mind be concordant and your hearts be united. Common counsel (possibly of an executive body), I lay before you and it demands your common consent (3). Let your resolve be unanimous. Let your hearts beat in unison; unanimous be your resolve and your friendly decision (\times , 191, 2-4). Let this *Samiti* give their consent to your royal authority (Av. 6, 18, 31). It seems that the consent of the *Samiti* was essential to establish a sovereign. *Samanam* was the gathering in which particularly well-dressed youths for amusements and love-making assembled before whom dancing, singing, athletic displays and dramatic performances as Pururavas and Urvashi (\times , 95), Yama and Yami (\times , 10), bride and the bridegroom (\times , 85) etc were shown (7, 2, 5; \times , 86, 10). In these pleasant entertainments young women smilingly with cunning love intrigues took their parts (4, 58, 2). In Buddhist times these hilarious parties were called *Samajjā* (*Digha Nikāya*) and in *Arthasastra* (2, 25; 13, 5) as *Samāja* when unrestricted drinking prevailed for 4 days.

CASTE.—In Vedic times there was no caste formation. But there were numerous professional guilds. The conquering and ruling tribes (*rājanyam*: $\sqrt{\text{Raj}}$ =to govern, to stretch. Skt. *rājan*=Lat. rex=king. Lat. regare=to rule; reg-alis=regal, royal. Gk. oreg-ein-to stretch) began to assume the title of Kshatriyas after the mighty conquering and ruling people—the Khatti, though belonging to different ethnic groups. Clever men (Skt. nara, Khatti *mar*, Gk. aner, Av. nairi) who could make fire, recite magic formulas (*nivids*) and make new prayers which were supposed to appease gods and bring success and prosperity began to be known as Brahmanas, after the murmuring tone of their utterances $\sqrt{\text{Bhram}}$ =to hum like insects. Skt. *bhramara*=humble bee; *brahman*=prayer which when uttered rapidly and indistinctly which is usually done to keep the magic formula secret and to avoid being found out, has the droning sound. Lat. frem-ere=to murmur. As. brim-sa=a, gadfly. The names of all Brahmana families—Angirara, (Alpine) Bhirgu, (Bryges: Caspian), Marichi (Caspian), Vasishtha (Aryan) and Atri (Semite)—are associated with fire-making. $\sqrt{\text{id}}$ =to kindle. Skt. *indh*=to kindle, *indhana*=fuel: Gk. *eithein*=to burn; Lat. *ignis*=fire; As. *ad*=funeral pile, Skt. *angāra*=Gk. *anthrax*

(anthracite) = charcoal like. Angirasa = arising from ember. √Bhraj = to shine, to fry; Vajra = lightning, thunderbolt. Gk. phleig-ein = to burn; pholks = flame. Lat. fulg-ere = to shine; fulj-ur = thunderbolt. Ger. As. blink-en = to blink; blitz = lighting = to shine. √Mar = to shine. Skt. Mar-ichi = a ray of light, Gk. mar-mar-eos = sparkling; Mars = glorious. Lith. merk-ti = to blink. As. morg-en, Ger. morg-en = the glimmer of dawn (morn). √vas, us = to shine. Skt. vas-ishta = most brilliant, excellently shining; ushna = hot; Usanas Sukra = the Venus, the name of a Bhārgava. Gk. es-tia = a hearth, ay-ein = to kindle. Lat. Vesta = the goddess of fire; aur-ora = dawn, ur-ere = to burn. √Ad, At = to eat: Gk. ed-ein - Lat. ed-ere - Goth. it-an = As. et-an = to eat. Atharvan (Av. Athravan) is fire priest. Av. atar, athar = fire. Lat. atrium (plu. atria) was originally hearth fire-place, that is kitchen, blackened (ater = black) with smoke. Gk. aitho = flame, burning; aith-ale = soot; aith-aleos = darkened by soot; anthrax = angāra = burning charcoal, ember, anthra kites = resembling charcoal, anthracite. Vedic **Atharvan Angirasa** = burning coal from fire, the name of a fire priest family of Vaisāli. **Atri**, another fire priest family is derived from the same unknown Aryan root from which Lat. ater = soot, atrium = plural of atrium = hearth, Gk. aitho = flame, Av. atar (*Farg* 16-45, = fire god) = fire, have been derived. The Brāhmins had white (gaura) complexion, grey (pingala) eyes and golden hair (kapila kesa: Patanjali's Mahābhāṣya: 1, 11.). The connection between √Ad = to eat with Atri seems to be overstretched, as fire is devourer of everything. It appears that Atri is a non-Aryan tribe. According to traditions, Atri is excluded from the original Brahmana clans which are only four in number—Angiras, Kasyapa, Vasishtha and Bhrigu (Sānti P. ch. 297, 17). Many members of the ruling families, finding court life unpleasant, due to succession disputes, intrigues and revolutions, adopted lucrative and influential occupation of priesthood Ikshvāku Māndhatri's fourth and fifth descendants Vishnu Vriddhas and Haritas adopted priesthood and joined the Angiras. When Navaga's kingdom was destroyed, his fourth descendant Rathithara became an Angirasa priest. Haihaya Vitihavya being defeated by Pratardhana of Kāsi became a Bhārgava priest. We owe the second Mandala of

Rigveda to his son Gritsamada and his descendants. Kausika Gathina Visvaratha became a priest when his Kānyakubja kingdom was devastated by Haihaya inroads, and he assumed the name of Visvamitra and founder a priestly gotra of his own. The third Mandala of the Rigveda is mostly the composition of the Visvamitras. Kanva, a son of Dacian Ajamira became an Angirasa priest, and Eighth Mandala is mostly the composition of Kanva Medhatithis. Ajmira North Pancala king Mudgala's younger sons adopted priesthood and were known as Kautha Maudgalya Brahmanas and affiliated themselves to Angirases. Of the same dynasty Divodasa's son was Mitrayu. Mitraya's son was Maitreya Somaka. His eldest son Srinjaya succeeded him; his other sons became Maitreya Brahmanas and affiliated themselves with the Bhārgavas. Bhārgava Jamadagni became a warrior. His son Parasu Rāma was a renowned fighter. Drona, an Angirasa, was a teacher of the Pāndavas in archery and he by his prowess acquired the South Pāncāla kingdom. Not only there were inter-marriages between the Kshatriyas and Brahmanas, but professions were adopted or interchanged as circumstances demanded. The social organizations were in fluidic condition. Ambastha was Palae-Alpine Usinara Sibi tribe ruling in the Punjab. When they lost their kingdom, many of the Ambasthas adopted medicine as their profession. But medicine as a profession was no monopoly of any ethnic group. Almost all tribes had their own medicine men as their own carpenters who made war chariots, their own leather tanners who made leather for war and domestic needs. Horse-breeding, chariot making, tanning and smelting required special training and technical knowledge. Every tribe had them and prized them. Alpine Pani became vanik, the trading class. Alpine Bessi after they lost their kingdom settled in the land they occupied as farmers and cattle-breeders and they have been known as Vaisyas. According to Gopatha Br. Vaisyas were fair (sukla) complexioned. Chudes, a mixed tribe of Australoids and Negroides, and whose settlements extended from Baltic Esthonia through eastern slopes of Urals, western spars of the Altai up to the south-western parts of Siberia, on the banks of the Yenisei, and whose ancient sites show that they were skilled in mental-

working, fruit-raising, irrigation works and raising of swine, have been known as Sudras. They made the Nanda Dynasty a great imperial power. The conquerors took slaves from the conquered. They were employed not only for grazing the cattle, tilling the soil, doing domestic work of drudgery, but also in skilled crafts so that they might be useful to their masters. Especially slave girls were valued. Purukutsya's son Trasadasya made a present of 50 damsels to Sobhari Kanva (8, 19, 36). A pretty woman adorned with golden ornaments is given to Vasa Asva by Prithusravas (8, 46, 38). These slave girls were of different races. Many of these girls were certainly utilized for the illegitimate sexual gratifications of their masters. This naturally originated in the development of cross-breeds. But cross breeds did not form castes. They were absorbed usually by their parental stocks. The different ethnic groups adopted occupations best suited to them, and in course of centuries they became hereditary. To keep the purity of blood the conquerors tried to restrict inter-marriage with the aborigines who were certainly so different in physical appearance and mental equipment. Many of the aborigines had dark complexion, flat broad nose, thick lips, prognathous jaws. With the Alpines, Aryans, and Caspians there was free-interchange of marriage and social relationship. Even the Palæ-Alpines who were generally absorbed with the Vaisyas, and at last the Sudras (Chudes) were incorporated into the Aryan social polity. Chudes were bleached people though they had thick lips, short flat nose and somewhat prognathous jaws. They were possibly somewhat mixed with the Mongoloids and Palæ-Alpines. These were all more-or less fair complexioned people, almost of similar culture. The aborigines who were dark-complexioned and broad and flat-nosed were beyond their social organization. Various ethnic tribes also immigrated in different waves. When the later groups came they found that the former groups were mixed as they could bring fewer women with them. Their racial pride and arrogance made them look down upon the former arrivals. This also caused social demarcation which crystalized into the formation of castes and sub-castes. According to Mahā Bharata (Santi P. Ch 1:8, 5) the Brahmins were whites (sita = blonds); Kshatriyyas were brunets (lohita);

Vaiśyas were Yellows (pitaka=Mongoloids); Sudras were non-whites (asita=mixed). This interpretation as to the origin of varnas (castes) betrays unconsciously their racial and tribal origins. Actually in the later stage of social development, all the ruling clans (Rājanyas) called themselves Kshatriyas after the imperial Khattis. (Purus); the priests recruited from all tribes as Brahmins. As the Bessi tribe after loosing their kingdom (Vāisali) settled as agriculturists, husbandmen and traders; after the Bessis all those engaged in those occupations became known as Vaiśyas. Slaves (dāsas) of every race, after the Chudes who were enslaved, became known as Sudras.

10.—DISEASES AND DEATH

By whom were brought the two heels (*pārśni*=Gk. laks=Lat. Calx=Lith. Kulnis) of man? By whom was his flesh (*māmsa*=Lith. miesė; O. Sl. meso=Goth. mimz=Lat. mem-brum) put together? By whom his two ankle-bones (gulphan, Lat. astragalus=Gk. agkyle=Ger. enkel, √ anc=to bend)? By whom his cunning fingers (*anguli*)? By whom his apertures (*khāni*)? By whom his two metatarsi (*uclakhas*) in the midst? Who (put together) the tarsus (*pratiśthā*: Av. ×, 2, 1)? From what did they make two ankle-joints, two patellas above. How did they put his two thighs (*Janghā*) by two knee-joints (*Janunoh Sandhi*; Janu=Lat. genu=Gk. konu=Ger. knie=knee: 2). Above the thighs are the four-jointed oval-shaped ring (pelvis formed of os coxae on either side and in front, the fifth lumbar vertebræ, sacrum and coccyx posteriorly) on which is situated the flexible (*sithira*) trunk (*kabandha*). The two hips (*sroni*) and the two thighs are the props of the frame. How many gods shaped the horax, cervical cartilages, two breasts, shoulder blades, the ribs and vertebræ and collar bones (*amsan*: 4). Who has brought together his two arms to perform deeds of heroism (5). Who has shaped seven

orifices in his head—the ears (karna=Lat. auris=Gk. oys= Russ. ucho=Ger. Ohr), eyes (cakshu=Skt. aksha=Lat. oculus=Gk. okos=Russ. oko=Ger. auge), nostrils and the mouth (mukha=Ger. mund. Lat. mando, Fr. manger—to eat. Lat. mentum=chin (6). Who has put within his jaws (hanu), an ample tongue (jihva) and given to it a great voice (vācan=Lat. vox=Gk. epos (7). What god has produced his brain (mastiska), the forehead (lalāta), cheek bones (kakatika) and the cranium (kapāla=Gk. kranion=the skull: 8. Gk. kapane=felt helmet; Lat. capadulum=headdress). Numerous pleasant and unpleasant things (priya √ Pri—to love. Lith. pretelus=Russ. priatele=a friend)—dreams (svapnam: √ Swap—to sleep. Lat. sopor=sleep. Gk. up nos=sleep. Russ. spate—to sleep. As. swefn=a dream), weariners, delights and pleasures—where does man get them from (9)? Who has woven his life (prānam)? Who has given him expiration (apāna)? Who has put into him respiration (samāna. Av. x, 2, 1-13. An—to breathe, apāna=breathing water (apa) containing air; anila= moving air; samāna=respiratory balance. Lat. anima=breath: animus=courage, mind. Gk. anemos=breath, wind. As. usanan=breathe out). How has he got fluids which are constantly moving, circulating like a river—alkaline, golden-coloured (bile), ruddy (blood), dark (venous), turbid (lymph, light straw-coloured fluid) in all directions (12)?

Yakshmā (x, 161, 1) was a fearful disease. It was of two kinds—*ajñāta-yakshā* (tuberculosis of some internal organs without manifest symptoms of coughing) and *rāja-yakshmā* (pulmonary tuberculosis with perhaps hemorrhage). Tuberculosis is caused by acid-fast tubercle bacillus in man, cattle and birds. No race is immune to its attacks. But the Negroes and Mongoloids seem to be easily susceptible to it.

The bacilli may invade any organ of the body of a person, predisposed to it by hereditary syphilis, malnutrition, especially of protein, and tubercles and ulcerations may be formed there (Av. 2, 33; X, 1637). It may be that in ancient times the idea was that the body was seized by an evil spirit (Grāhi X 151-1; √ Gar—to devour. Skt. grahana=seizure; ajā-gara—a goat-swallow—boa constrictor. Lat. vor-are—to devour. Gk. bora=food. Skt. gar-gara=a whirlpool. Lat. gurg-es—a

whirlpool, gula=guillet, glutire=to gulp down) which needs to be expelled by magic amulets or incantations; and the interpretations we give were not originally meant. But perhaps they did not lack in clinical observations. "Forth from the eyes (the inflammation of the lachrymal sac—dacryocystitis, is produced in tuberculosis when a tubercle or tuberculous ulcer is formed in the sac), nostrils (single tuberculous ulcers settled by predilection on the cartilaginous septum low down; Tuberculoma and diffuse tuberculous infiltration of the nasal mucosa with final ulceration may prove destructive, leading to perforation and loss of bone), ears (tubercles may be formed and tuberculous ulcerations of the petrous bone of the middle ear, leading to nervous deafness), jaws (in tuberculosis of the jaw, the diagnosis depends upon the insidious onset, the involvement of the ascending ramus of the lower jaw, the obvious tuberculosis of the lymphatic glands of the neck, and the formation of a cold abscess beneath the temporal muscle, due to the wandering upward of the pus between the pterygoids and the bone), brain (tubercle is the most frequent neoplasm which invades the brain; in children the majority of lesions (paralysis) referable to cranial nerves are secondary to tubercular basilar deposits), the tongue (tuberculous ulcerations of the tongue may be present with uneven edges, without punched out appearance of the specific ulcer with or without lip ulcer), I eject for thee the Yakshmā of the head (X, 163, 1). From thy *grivās*, neck (scrofula, there is a strong tendency towards chronicity when the neck glands are involved and in most superficial adenoids caseation and suppuration is the fate of the invaded glands), ushniḥās—nape (cold abscesses of the cervical spine being situated behind the thyroid and behind arteria carotis), *Kikasa*—Vertebrae (there may be tubercles in the spinal cord. The caries of the spine is known as spondylitis tuberculosa. In it the vertebra has softened enough to give rise to a projecting angle or gibbus), anukyat back-bone (caries on the ribs), ansā—shoulders (a subdeltoid bursitis may be due to acute infection, to trauma or to tuberculosis. An inflammation of the shoulder joint, omarthrits, may be due to chronic infection of tuberculosis or to syphilitic gumma), Vāhu—forearms (chronic arthritis of the elbow

joint may be due to tuberculosis, syphilis or other forms of chronic infectious arthritis), I eject for thee the Yakshmā of the arms (X. 163, 2). From thy heart (*hridaya*=*hrid*=Gk. *kardia*=Ionic *kradic*=Lat. *cor*=Ger. *Herz* √*Kard*, *kurd*=to throb. Skt. *kurdana*=play, leaping; *kroda*=shaking with anger. Gk. *krad-ein*=to quiver. Lat. *cardo*=hinge (gate swings). As, *hearto*=heart. The tuberculous patient has low blood pressure, small sized heart. Tuberculous pericarditis is rarely primary), Kloman—lungs (chronic ulcerative Phthisis is the commonest form of pulmonary tuberculosis), *haleksnā*=pancreas (tubercles of the pancreas is only found $\frac{1}{2}$ p. c. cases in generalized tuberculosis), *matasnas*=kidneys (tuberculosis of the kidneys ranges from one or more small tubercles embedded in the stroma to the condition where the entire kidney substance is changed into a huge tubercular mass), spleen (*plihan*=Lat. *splen*=Gk. *splen*: chronic tuberculosis involving the spleen is rare, but is sometimes met with and may cause enlargement as in Kala-Azar and syphilis), liver (*yakrit*=Lat. *jecur*=Gk. *hepati-kos*. *Yakrit* may be a variation of *sakrit*=internal secretion; the liver may be involved in a tuberculous process, arising either from extension of tuberculous disease from a neighboring organ—kidney, lymph gland—or by a metastatic deposit of tubercle bacilli in the hepatic vessels. However it is very rare and is seldom recognized during life), we eject for thee the Yashmā (Av. 2, 30, 3). From the entrails (*anthra*=Gk. *enteron*=Lat. *entera*. Most primary tuberculous infections of the intestine are found among babies, due to tuberculous milk or contamination of food with tuberculous material without any symptom of pulmonary invasion. The baby presents the symptoms of acute or sub-acute gastro-enteritis. The wasting is usually rapid, loss of strength prompt, fever and increasing anemia striking. Secondary tuberculous enteritis is present in all cases of advanced pulmonary tuberculosis in which there is cavity formation. The gut (*guda*=the lower end of the gut—the rectum. √*Gu*=to pour. Skt. *gu-pta*=concealed; *gu-hya*=hidden. Gk. *koe*=a stream. Lat. *fo-n*=a fountain. Ger. *gosse*=a drain. Fr. *goutte*=drops of liquid. Ischio-rectal fossa is a favourite seat of tubercular abscess), Vassishtho—Fallopian Tubes (salpingitis

tuberculosis is a common in women, usually bilateral. The masses are easily felt on bimanual palpation, but should not be confounded with gonorrheal lesion), udara=abdomen (tuberculous peritonitis spreads in the larger number of cases from a pre-existing deposit. In 50 p.c. of cases in women it is a part of genital tuberculosis, and the spread from the Fallopian tubes is most frequent. In children the intestines may supply the infection), Kukshi=pelvis (tubercular caries of the pelvic bones are common), Plasi=bladder (tuberculosis of the bladder, prostrate, seminal vesicles, testes, ovary and the uterus is comparatively rare though tuberculous epididymitis is fairly common), nābhi=navel, I eject for thee *Yakshma* (Av. 1. 33. 4). From bones (*asthi*=Gk. osteon=Lat. os. The bones most frequently affected by tubercular caries are (1) those of the spine; (2) the bones of the pelvis; (3) the other bones as calcis, jaw, femur, ribs, skull, sternum, tibia—may be affected. The process begins in the bone-marrow), marrows (*majjā*=Av. mazga=OSl. mozgu=Teut. marg=Ger. Mark=Fr. moelle), sinews (*snāva*=Teut. senawa=Ger. schne), dhamani=vessel (every local tuberculous herd, closely related to an artery, vein, thoracic duct or lymphatic stream represents the link between the primary focus and the generalized infection—miliary tuberculosis), nerve (*nāri*=Gk. neuron=Lat. nervus=Fr. nerf. Peripheral neuritis of tuberculous origin is amenable to treatment when single nerve is involved. But polyneuritis is serious. Invasion of cranial nerves is one of the early evidences of tuberculous meningitis), skin (tuberculosis of the skin may assume several different forms. (1) Lupus vulgaris most often attacks the face—nose, cheeks, upperlip; the neck, trunk and extremities may be affected. (2) Scrofuloderma beginning in the subcutaneous layers or in the deeper layer of the cutis), hands (*hastha*=Teut. hant=Ger. hand), fingers, nails (*nakha*=Lith. nagas=Russ. nogote=Ger. nagen=Gk. oneks=Lat. ungu-is. √nagha=to bite, scratch, gnanw Skt. niksh=to scratch. Gk. nusessein=to gnaw) I eject for thee the *Yakshmā* (Av. 2. 33. 6; X. 163. 4-5). Consumption is the wasting of the tissues of the body, which is usually the case in tuberculosis of the lungs or intestines. It is from Lat. con (together) sumere=to use.

√sush=to dry, to wither. Skt. sushka=dried up, arid; soshaka=one who sucks out the juice and causes withering; soshana=drying up, Av. hush—to dry. Gk. huein—to wither. As. sear=withered.

KASAI Av. 5. 22. 11-12) is the cough (Bronchitis. Kāsa=Lith. (Kos-ti—to cough. Ger. keuchen—to pant, to grasp for breath). “Do not make them thy (fevers) companion—the *balāsa* (asthma), *Kāsa* (bronchitis) and *udyuga* (hiccough). O Fever with thy brother *balasa* (asthma), sister *Kāsa* (bronchitis) and with thy cousin *pāman* (scabies) go to yonder foreign peoples (Av. 5. 22. 11-12). Acute Bronchitis is usually associated with slight fever, cough, chilly sensations and the undue harshness of the respiratory murmurs. Chronic bronchitis is the result of lasting inflammatory process involving the bronchial mucous membrane and characterized by the occurrence of destructive changes in the superficial epithelial layer with the thinning of the mucous membrane of the larger tubes as a result of the atrophy of the muscular coat. It is rarely of primary origin. In vast majority of cases it originates in men past middle age as the result of pre-existing or chronic heart, liver or kidney diseases. Asthma shows hereditary predisposition. Periodic attacks of Asthma often occur during the course of such chronic maladies as organic heart disease, nephritis, rheumatism, syphilis and emphysema. Hiccough is due to spasmodic contraction of the diaphragm. It occurs in diseases of the abdominal viscera—gastritis, dilatation of the stomach, diseases of the liver, chronic nephritis, gout, diabetes, dysmenorrhea, pregnancy. With typhoid fever, it is almost always serious. It may be a symptom of intestinal perforation, hemorrhage or deep toxemia. Hiccough with inflammatory diseases with the abdominal cavity as appendicitis is suggestive of grave consequences. By scabies is meant that form of ascariasis dermatitis accompanied by intense itching, caused by the burrowing beneath the skin of the itch mite—*Sarcoptes scabiei*.

TAKMAN (Av. 1; 25) is Malaria. “Salutation to thee O chilly *Takman* (sitaya: Takmane: Malarial paroxysm begins with chilliness, increasing until the whole body shivers and the teeth (danta=Pers. dandan=Lith. dantis=Lat. dens=Gk.

odoys, Goth. *tunthus* = Teut. *zand* = Ger. *Zahn*) chatter with cold; the face is pale, the fingers livid and the nails blue; cutaneous vessels are constricted and the surface is cold to touch, but the rectal temperature begins to rise. There is a copious flow of clear watery urine). 'Seek thou Takman the buxom Sudra damsel; her O Takman do thou shake up a bit (Av. 5, 22, 7). Homage I pay to the fierce (rura) heat (Malarial paroxysm of the second stage is attended with dry heat, high temperature and thirst; the skin is burning and flushed. The urine is now scanty and high coloured. The third stage is sweating which is profuse and may be drenching. The urine is scanty and deposits a thick brownish sediment of urates on cooling. The three stages of paroxysm lasts between 6 to 12 hours). To the one that falls on every alternate day (after the intervals of 24 hours: quotidian due to the invasion of *Plasmodium falciparum* parasite which is the most malignant type, because of its greater output of gametes in the blood, and which needs a very high temperature and about 6 days to complete its life cycle), after the interval of 2 days (after 48 hours due to the invasion of *Plasmodium Vivax* which can thrive in a wide range of temperatures and known as Tertian), after every third day (tritiyaka = tertian, after 72 hours, due to the invasion of *Plasmodium malarae* known as quartan. The fever chart itself is no index of the malarial parasite, for two broods of *P. vivax* and 3 broods of *P. malarae*, or mixed broods make the fever *quotidian* or *intermittent*: Av. 1, 25, 4). The fever after the third day (quartan), after two days (tertian) and *intermittent* (possibly typhoid or puerperal) of the summer and autumn (estivo-autumnal fever), of the chilly and hot stages, and of the rains, do thou destroy. To Gandhara (Kandahar), Mujavants (in the foot hills of Altai Range), Anga (Northern Bengal) and Magadha (Bihar), like one sending a person a treasure, we commit Takman (Av. 5, 22,). *Takman* raises heat (temperature) of the body and makes the body yellowish (jaundice. Av. 6, 2, 1-3).

Hariman—(1, 50, 11; Av. 1, 22) is Jaundice. Icterus jaundice is associated with yellow coloration of the skin and other parts of the body, often due to some derangement affecting the liver. This yellow colour is due to the presence in the

blood of bile or some of its constituents. Any obstruction of the passage of bile from the liver into the intestines sooner or later results in jaundice, the retained bile being partly absorbed into the blood. The stoppage of the bile into the intestines may be due to gallstones or parasites, inflammation of the lining membrane of the bile duct or its stricture, or of the duodenum, or any pressure on them from without through tumours. The impediments to the outflow of the bile cause the distension of the liver and the biliary duct with the retained bile which is thus absorbed into the system. The first sign of jaundice is a yellow coloration of the white of the eye which is followed by the similar tint on the skin all over the body. The tint varies according to the amount of the obstruction of the bile. The urine shows the first symptom of the bile absorption. It is dark-brown in appearance and becomes greenish on standing. The stools are whitish or clay coloured due to the absence of the bile, and due to undigested fats, have an offensive odour. Mild jaundice is observed in malaria, syphilis, pyaemia and in phosphorus poisoning. The jaundiced person becomes easily irritable, languid, drowsy and has usually a slow pulse. Hridyota (Av. 1, 22, 1) is the Heartburn—Pyrosis—characterized by the burning sensation in the epigastrium, frequently extending up behind the sternum to the pharynx and sometimes accompanied by the regurgitation of a watery acrid or acid fluid. Hridroga (1, 50, 11) is Angina Pectoris, characterized by precordial oppression and discomfort with slight cardiac pain, radiating to the neck and arm. In severe form there is usually intense excruciating pain in the region of the heart. The pain radiates into the neck, left shoulder and down the arm to the fingers, and sometimes to the right arms down the body. There is a sense of cardiac constriction often with coldness and numbness of the praecordium and the fingers. The face is pale and betrays a feeling of intense anxiety. The face and body are often covered with large drops of cold perspiration. A sense of impending death is the characteristic symptom. Myocardial changes coexist with aortic insufficiency and adherent pericardium. The exciting causes of the attack are gastric distension or disturbance, strong mental emotion, exposure to cold or muscular exertion. In acute dila-



tation of the heart which takes place in fevers, dyspnoea, palpitation, sometimes praecordial oppression with weak and frequent pulse manifest as evidence of systematic venous stasis. In fatty infiltration which takes place in prolonged infectious fevers as tuberculosis or chronic anaemias, senility, there may be bronchitis, vertigo, syncopal attack with feeble pulse.

Jāyānya (Av. 7, 76) is the venereal disease, received from the *Jaya* (wife—or woman), and *Apacita* (Av. 7, 76, 2) is adenitis. Gonorrhoea is a specific inflammation of the urethra and other passages caused by gonococci which find entrance during coitus, spreading to all the crevices of the mucous membrane and setting free in their development a toxin which causes great irritation of the passage with inflammation and swelling. After incubation of 3 or 4 days the acute inflammation sets in with profuse discharge of yellow matter (*sarpi meha*), with much scalding during micturition. The inflammatory process may extend backwards and give rise to acute prostatitis with retention of urine and to the duct of the testis (epididymitis), thus preventing the passage of semen in powerful jets causes sterility. In about 2 weeks the inflammation gradually subsides, but a thin watery discharge remains (gleet), but which also contains gonococci. A lingering gleet may be due to the presence of a definite ulceration in the urethra and this being chronic is accompanied by the formation of much fibrous tissue with narrowing and stricture of the urethra, thus making urination difficult. In the case of females the inflammation may extend to the Fallopian tubes, particularly during the birth of a baby, thus making her sterile (known as one or two children sterility). Chancroid (soft chancre) is a local contagious ulcer of the genitals due to the inoculation of the bacillus of Ducrey. The ulcer becomes a multiple soft sore about 3 days after exposure and as it increases in size, free suppuration takes place. In persons of broken down health, sore eats up the tissues rapidly and is called phagedaenic. The bacilli from the soft sore pass by the lymphatic vessels to the glands of the groin and set up there inflammatory chancroidal bubo (*apacita* in Vijānmi : Av. 7, 76, 2) and which was incised in the centre for drainage (Av. 7, 74, 2). Syphilis is introduced into the body through an abrasion,

usually on the genital organs during coitus through a mobile protozoon of spiral form—*Spirochaeta pallida*. A cartilaginous button like hardness (chancre) appears at the seat of inoculation. It turns into an ulcer with an indurated base and edges. If the original sore is in genital organs the glands in the groin are first attacked (bubo) which become however indurated and painless. This indurated inguinal bubo near the testicles (mushka) is called *sipudru* (wooden testicles Av. 8, 12, 7.). Infection invades the whole system before the chancre develops. The skin eruptions break out. These eruptions do not itch. Irritation of any mucous membrane is followed by papular eruptions with superficial ulceration. In debilitated persons, especially in untreated cases, nodular inflammatory deposits are formed which are apt to break down and give rise to deep ulcerations. These are known as gummata. And they do not generally manifest before the lapse of a few years. They are found in the liver, testes, brain, tongue, jaw-muscles, the periosteum, the lungs and the skin. The gummata and the ulcers left by them are the tertiary manifestation of syphilis which in majority of cases are not observed, the virus being immunized by bodily resistance or attenuated by medical treatment. When both parents are syphilitic at the time of fecundation abortions are frequent at an early stage. Gradually abortions take place at a more and more advanced period of fetal development until they cease and pregnancy results in a child living, but syphilitic. But still later children have no stigmata of syphilis. The moist eruptions and ulcerations about the mouth and anus of the infant as well as the skin affections generally swarm with *Spirochaeta pallida* and are contagious. From the second to the sixth year, there is usually quiescence. But the tabia may become thickened with periostitis. However the growth is arrested. The nose is flattened and there may be destruction of the nasal bones, and carries of the forehead and the skull. There is notched incisor teeth of the upper jaw (bull-tooth—Vrishadanta : Av. 1, 18, 4), interstitial corneitis and deafness. Thickening of the frontal and parietal bones around the anterior fontanelle (Parrot's nodes) develops from the sixth to the twelfth month (Av. 9, 8, 22 ; 1, 10, 11). And in case of anuria due to urethral cons-

triction through gonorrhoeal inflammatory changes, reed like bougie was introduced through the urethral canal (mehanan vartan) to the bladder (vasti) for urination (Av. 1, 3, 7-8). "I force open the urethra (through a reed) and unfasten the bladder orifice (Av. 1, 3, 7-8). Leucorrhœa of gonorrheal origin (srāva) was common (Av. 2, 3, 3). In Avesta (Far. 1, 19) it is mentioned that women of Sapta Sindhava suffered from abnormal issues. It is the Jahi (Jāyā or Yoshā) who goes whoring after the faithful and the unfaithful. Her touch (sexual embrace) withers in the faithful one third of his good thoughts, one third of his strength. Such creature ought to be killed even more than gliding snakes, than howling wolves (Farg. 18, 62, 65). And Jāhi sings, intrusive, walks about the roads, and is poor (Farg. 13, 48; 1, 104, 8). In Purushamedha the harlot (pumsacalu), seducer and adulteror (jāra, upapati) are to the sacrificed (Vs. 30, 4, 41). Sterility in women (Vehat: 4, 23, 1) due to gonorrhoeal salpingitis was not infrequent. And abortion, due possibly to syphilitic virus, was not a rare occurrence (\times , 162, 2; Av. 6, 17, 1); nor general paralysis of the insane of parasymphilitic origin (Av. 6, 111). And in hereditary diseases (Kshetriya: Av. 3, 7, 1) calcium was given in the form of gazelle horn paste. There were talipes (risya padi=antelope-footed=clubfooted=pes equinus), bull-toothed (vrishadanti—the notched incisor teeth of the upper jaw), pallid children (Av. 1, 18, 4). Apacit of the neck is tubercular adenitis, scrofula (Av. 1, 76, 2). It may seem strange that one should get venereal diseases from his wife—Jāyā. But Jāyā might have originally meant any buxom maid as Avestan Jāhi \sqrt{Ja} -to beget. Skt. yoshā=woman, jami=sister; jani=a woman, wife. Janani=mother, Gk. gynē=woman, Goth. kwino=woman. Russ. jena—a wife. And though the Aryans had high appreciation of virginal chastity, but not all races did the same. The Sakas and Getæ brothers had wives in common. The Khasas (Kassites) of Dehradun and Simla Hills, the Todas of Nilgiris and Garos of Assam still practise fraternal polyandry; Nairs, communal polyandry. Caesar speaks polyandry of the British, likely Caspians, in his De Bello V. 4). Khattis had amazons (R. P. Vol. 8, P. 247). Levirate was practised (\times , 18, 8; Av.

18. 3) 2). Niyoga (\times , 40, 27 and remarriage were known (Av. 9, 5, 27). Palae-Alpines, Alpines and Caspians were noted for their laxity of sexual morals. Vaisya (Bessi), Bhrigus (Bryges) maidens enjoyed complete sexual licence until their marriage (14. E. B. Thrace). Palae-Alpine, Sces (Sesa) and Karkota, Nāganis were known as Apsaras—nymphs for their dancing, music and sexual attractions. Mongols did not value chastity; it was to them of no material value, if not for bargaining. And in Vedic times Bhāratvarsa was not inhabited by the Aryans alone, nor the Vedas are the compositions of them alone, or of one age. Almost all races have contributed to their compositions; so no wonder if among them some of the tribes got venereal diseases from their joint or remarried wives. At Luxor on Jan 27-1928, a body of the princess of the court of Amenhotep III (1412-1376 B. C.), adorned with tatoo marks, has been found with syphilitic osteitis and peristitis.

Visalpa (Av. 9, 8, 20 : Visalpaka ; Skt. Visarpa) is **Erysipelas**, an acute contagious disease, characterized by a spreading inflammation of the skin, caused by *Streptococcus erysipelatis*, getting an entrance through an abrasion or wound. In facial erysipelas the point of entry is probably an abrasion by the lachrymal duct. The skin in a mild case is red and oedematous and may show small vesications. The edge of the patch is often raised and distinct, and extends from day to day. In about a week the inflammation subsides. One attack does not impart any immunity against future attacks; rather due to lowered resistance, it makes the body susceptible to it. In severe cases there is constitutional disturbance due to bacterial toxemia with delirium, the temperature rising to 105° F. A fatal form occasionally attacks new-born infants, in the first four weeks of their lives. With low resistance, erysipelas may lead to general septicaemia, known as Vidradha (Av. 6, 128, 3).

VI-LOHITA (Av. 9, 8, 1) is **Anaemia**, due to the reduction of oxygen carrying red colouring matter (lohita) of the hemoglobin. Hemoglobin of the erythrocytes carry oxygen to the tissues and transfer carbon dioxide from the tissues to the lungs. Temporary anaemias may be due to malaria, hemorrhage, malnutrition or to a chronic disease. But the causes of chlorosis and of Pernicious Anemia are unknown. However

all anemias are characterized by the pallor of the skin and mucous membranes, shortness of the breath, palpitation, faintness, languor, headache, often associated with gastro-intestinal disturbances. The red bone-marrow (erythroblastic tissue) in health regularly supplies the blood with red corpuscles which contain a constant amount of hemoglobin to take the place that are destroyed in the liver, spleen and other tissues. Thus the red corpuscles and their hemoglobin content remain constant. But if there is an abnormal destruction of red corpuscles, the red bone marrow compensates by producing red corpuscles which are small and contain subnormal amount of hemoglobin. By examining the urine (hemoglobinuria), one can find the amount of hemoglobin destruction. The etiology of chlorosis is not certain. But it seems to be associated with ovarian deficiency and menstrual disturbances during puberty. In the subjects suffering from Pernicious Anemia, it has been found there is deficiency of hydrochloric acid in the stomach. And its deficiency facilitates the growth of *B. aerogenes capsulatus*, a normal inhabitant of the intestine, in large numbers. It produces a hemolytic toxin. In Pernicious Anemia, it is found in large numbers in the intestine and it decreases as the patient improves in health; there is tendency to bleed into the skin and serous surfaces. Some patients experience sensations of numbness and tingling and neurotic pains. Anemic patients improve if they are fed with liver, about $\frac{1}{2}$ a pound daily for a few weeks. If liver is not well-tolerated, dilute hydrochloric acid by mouth will improve digestion and health. Brain, bone-marrow, pancreas and spleen of animals are also very useful. Prunes, peaches and apricots are beneficial as they are rich in organic iron contents.

APVA (\times , 103, 12; Av. 9, 8, 9) is **Ascites**. Ascites, an effusion of non-inflammatory fluid within the peritoneum, is the manifestation of the disease of kidney, heart or liver, causing portal obstruction. Portal obstruction is the common cause of ascites. Portal obstruction is caused by (1) diseases with the liver as cirrhosis and cancer; (2) diseases outside the liver as cancer of the stomach, duodenum or pancreas, bringing pressure on the portal vein, or enlarged glands in the hepatic fissures themselves. Ascites is a late symptom of portal obstruction.

tion and precedes dropsy of the leg which manifests a little later, due to the pressure on the large veins in the abdominal cavity by the ascitic fluid. In ascites due to heart disease dropsy of the feet and the legs precedes the ascites and the patient complains of shorter of breath, palpitation and perhaps bronchitis. In the ascites of renal lesions, there is general oedema with puppiness of the eyes at rising in the morning.

SIRSHAKTI (Av. 9, 8, 1) is **headache**. Headache is but a symptom of some underlying organic troubles. In the vortex of the head pains may be due to anemia, chlorosis, hysteria, neurasthenia, diseases of uterus, ovaries and bladder. Occipital and cervical pains may be due to dyspepsia, constipation, uterine disease, nephritis, uremia, syphilis, rheumatism and middle ear disease. Unilateral head pain is due to hysteria, dysmenorrhoea, eye strain, lithemia. Frontal and temporal headache is due to anemia, neurasthenia, nephritis, dyspepsia, constipation, lithaemia, eye strain, syphilitic nodes. Pain of the eye balls is due to migraine, coryza, conjunctivitis, eye-strain, glaucoma. Nephritic headache is of throbbing character, somewhat shifting, accompanied by vertigo and tinnitus. The headache from constipation and disorders of digestion is usually of throbbing pulsating character, affects the frontal and orbital regions and is made worse by sudden movements of the head. The headache of uterine disease is usually occipital, sharp and radiating. The headache of neurasthenia is of a pressive character, usually vertical, but sometimes a painful band around the head. Karnasula (earache : 9, 8, 1) is due to otitis media, alveolar abscess, carious teeth, mastoid disease.

PRAMOTA (Av. 9, 8, 4) is deaf-mutism. Deaf-mutism may arise from cerebro-spinal meningitis in children. The auditory nerve may undergo primary degeneration in locomotor ataxia, thus causing deafness. Blindness (*andham* : Av. 9, 8, 5) is commonly caused by gonococcal conjunctivitis—ophthalmia neonatorum. Optic atrophy and bitemporal hemianopsia are mainly due to locomotorataxia, syphilis, brain abscess. /Mu =to bind. Skt mu-kha=dumb. Gk. mu-ein=to close the mouth or eyes. Lat. mutus=mute, dumb. Kushtha (Av. 1, 22, 23) is Leprosy. Leprosy is most prevalent in hot damp climate, and least in dry areas. It is a disease caused by B.

leprae. There are many resemblances between the lesions of leprosy and tuberculosis. And many lepers contract tuberculosis. In ancient times the leprosy sores have been confounded with syphilitic ulcers. The disease is contagious, but is of slow incubation. Intramuscular injections of ethyl esters and sodium hydrocarbate of Chaulmoogra oil have proved beneficial in the treatment of leprosy. Sveta (Av. I, 23, 4) is Leucoderma. Syphilitic Leucoderma is pigmentary syphilide with central, white patches. Tropical leucoderma—an acquired depigmentation of the epidermis in areas of skin due to some nervous disturbance or fungus growth, is a common disease. The patches in contrast to leprosy do not show anesthesia. No cure of the disease of unknown origin is yet known.

KLIBA (Av. 6, 138) is Impotentia coeundi, that is, inability to perform the act of coitus. Impotence may be psychic in origin. Sometimes it is due to premature ejaculation, especially in neurasthenics, the semen being discharged before the physiologically necessary stimuli have acted in normal long circuits. The power of erection is lost in tabes. In secondary syphilis falling out of the hair of the head may be diffuse or it may occur in patches (alopecia syphilitica). The hair of the head, axillae, eye-brow (Skt. bhrū—Lith. bruwis=Gk. ophrus=Russ. brove=Goth. brahw=Pers. abru), eye lashes, and pubic region (of Apala Atreyi Upodare: 8, 91, 5) may fall out. When Hypopituitarism occurs in children the hairs of the axilla (hirci) and those of mons veneris (crines pubis) are scanty or absent. In males the hairs of the beard may be scanty or absent, and the distribution of the hairs of the body may resemble the female type. In the female the hair distribution resembles the masculine type. The genitalia remain infantile with obesity. If hypopituitarism appears after puberty, the secondary sex features undergo regressive changes, with falling out of eyebrows, hirci and crines pubes. *Salam Jiva sarada* (x, 161, 4). A life (Jivana: √jiv=to live; Skt. jāvāna=youth; jiva=living creature. Gk. zāw=1 live; bi-ōs=life. Lat. viu-ere—to live; vita=life. Russ. ji-te=to live) of one hundred years was the highest expectation one could make and desire. The struggle for existence was severe. Life was hard (kru-ra: √kru=sore. Skt. kru-dha

=anger. Gk. kru-os=frost. Lat. cru-or=bleeding wound : cru-delis=cruel. As. hrim-hoar frost). Only men of personal bravery, agility of movement, physical strength and courage, trained and disciplined under a great leader, could succeed in life. The defeated not only lost their possessions, died in ignominy, their wife and children were carried away as slaves. Which is the place where the earth feels the sorest grief. It is the place whereon the wife and children of one of the faithful are driven along the way of captivity, the dry dusty way and lift up a voice of wailing (*Farg.* 3. 11).

Disposal of the Dead.—Aryans burnt their dead (×, 15, 11 ; ×, 16, 1 ; 13 ; Av. 18, 3, 6 ; 18, 2, 36). But other ways of disposal of the dead were also known and practised. Some were consumed in fire (*agni-dagdha*) ; others not consumed in fire (*an-agni-dagdha* : ×, 15, 15 : √ Dak=to bite. Skt. dansa=bite ; dashta=one that is bitten ; daksha=biter, clever ; agni-dagdha=eaten by fire=consumed in flames. Gk. dak-nein—to bite ; dak-ry=tear. Lat. dak-rima, lac-rima=tear). "Burn (sam tapa : √ Tap ; to glow tapana=the sun. Skt. tap-as=fire ; tapa—to burn ; Russ. top-ite=to heat. Lat. tep-ere=to be warm, tepids). Blaze forth not fiercely. Lat. tepio=Gk. tethra, thapta—to burn to ashes). O Agni do not destroy the bones (bones of the dead were thrown into sacred waters) by your flame. Show your destruction in the wood (funeral pile) and on the earth (on which the funeral pile was placed, and not on the bones (Av. 18, 2, 36). Consume him not, O Agni. Burn him not in fierce flame, so that his skin is not split up nor his frame (bony). When thou shalt have burnt him up, O Jātavedas, then send him up in the shape of manes (pitri-rupa : Av. 18, 2, 4). Those that are buried (*nikhātā*), or scattered away (*paroptā* : limbs were cut into pieces and scattered away to be eaten by dogs, vultures or jackals), burnt (*dāgdhā*), to be seated up (in jars), all these father, O Agni, bring thou to this oblation (Av. 18, 2, 34). Those who are burnt with fire or not burnt with fire in midst of heaven carouse (*madayante* : √ Mad=to be drunk) with Svadhās (according to Bhag. P ever-youthful daughters of Daksha, that is, the stars : ×, 15, 14 ; Av. 18, 2, 35). After the dead was burnt out, water was thrown to quench the fire. Now, O Agni,

thou hast consumed (the dead man). Be thou now extinguished. Let here grow now flowers (Kiyāmbu = a flowering plant growing in a moist place), tender grass (Pāka durvā - *Panicum dactylon*) and leafy herb (vyalkasā : x, 16, 18). Wife of an Aryan chief was usually burnt with her deceased husband; the wife of Caspian noble was buried with him. Later this cruel custom was given up. Thracians (Mela : 2, 2) and Gauls (Caes. Bell. Gall : 6, 18) cremated the wives with their dead husbands. And generally the dead man's brother or cousin took her as his spouse or secondary wife. But the wife was made to lie down near the funeral pile or burial place of her dead husband. "Rise up O wife (nāri), and come to the world of the living. Thou liest by one who is deceased; come to him who grasps thy hand, thy second spouse (didhisu); thou hast now entered (with him) into the relation of wife to husband (x, 18, 8; Av. 18, 3, 2). It seems that sometimes at least forcibly the wife was cremated or buried with her dead husband in order to be servicable to him in the next world as she has been in the past. "Seeing the youthful dame (yuvati) being carried away, a living being to be a companion of the dead and she was enclosed in deep darkness (her body was covered and bound in some clothes so that she could not move or offer any resistance), then I led her offward and made her appear in front (before all: she was unbound and brought to the assembly of others (Av. 18, 3, 3). "Take yourself the bosom of the mother earth (mātaram bhumim). This earth extending far is very propitious like a maiden, soft as wool to one she is favourably disposed; may she preserve you from destruction. Open wide, O Earth. Press not heavily on him. Afford him an easy access and gently tend him. Cover him as a mother wraps the body of her babe with her robe, O Earth (x, 18, 10, 11; Av. 18, 3, 49). They cut off (from the dead body) the hair, the beard, the hairs of the body and the nails. The aged persons, men and women not going together, (carry) the dead body, some say, in a cart with a seat, drawn by cows, and she-animal behind—a cow, or a she-goat of one colour or black colour. After grass and a black antelope's skin with the hair outside have been spread out there, they place the dead man there on, which they have carried. To the north (of the body

they place) the wife (of the diseased). And a bow for a Kshatriya. Her brother-in-law, being a representative of her husband, should cause her to rise (x, 18, 8). Taking the bow with, "From the dead hand I take the bow to be carried to secure power, might and renown. You will be here. But we with our valiant heroes will vanquish all foes (x, 18, 9). The son (of the deceased person) should take the under and upper millstone for himself, and other implements made of copper, iron and earthenware. Taking out the omentum of the she-animal he should cover therewith the head and the mouth (of the dead person) with, "Shield thee with flesh against the flames of Agni; cover thee with fat and marrow so that the fire eager to attack thee with fierce flame will fail to cover and consume thee (x, 16, 7)." Taking out the kidneys of the animal he should lay them into the hands (of the dead body) with, "Escape and outspeed the two hounds—Saramā's offspring (Canis Major, Canis Minor), brindled, four-eyed who watch the mortal and guard the pathway (Milky Way). Draw near the benevolent Pitris where they enjoy the company of Yama (x, 10, 10)." The heart (of the animal he puts) on the heart (of the deceased). Having distributed the whole (animal) limb by limb and having covered it with its hide, he gives order, light the fires together. While the body is burning, he recites: Go forth go forth upon the ancient pathways whereon our sires of old have gone before. There the gods Varuna and Yama are reveling like kings (x, 14, 7). Being burnt by a person who knows this, he goes to the heaven-world together with the smoke. After the tenth (day from death), a man into a male urn, a woman into a female one with the thumb and the fourth finger they should put each single bone (into the urn), the feet first, the head last. Having well gathered them they should put (the urn) into a pit; then they should go away, should bathe in water and perform a Srāddha for the deceased (x, 18, 13: As. Gr. S. 4, 4-5). The Mitannis burnt their dead and buried the funerary Vases filled with ashes (1. L. N. Dec. 30, 1939). At Mohenjodaro and Harappa in the upper strata half-burnt bones of the cremation were interred in funerary urns. The Parsi *Dakma* originally meant crematory, from *√dak* or *daha*—to burn. The Khattis after partial cremation of their

dead, interred the half-burnt bones in large jars. Khatti wives had great privileges. Khatti wives jointly with their husbands performed religious sacrifices. Even in meal times wife had to participate with her husband in the offerings to the ancestors. Before the gates of the temples we find Khatti amazons, clad in armoured vest and armed with bows and daggers. The Etruscan, Greek Pelasgos, belonging to the Caspian race, practised jar burials. But later in Italy they cremated their dead after Aryans, and ashes were buried in urns of various shapes with human heads and arms (R. P. Vol. x, 135-145). It was customary among the Germans to destroy weakly, sickly or deformed children, to drown in morasses men whose bodies had been mutilated and when became useless from old age, voluntarily to deprive themselves of life. An existence devoid of strength and beauty appeared to them worthless, and according to their religion, the joys of heaven were only granted to those who fell by the sword. In the north the sick were at their own request pierced with a lance in order that a wound and not disease might be the cause of their death. In Norway there was a rock from which the old men threw themselves into the sea after dividing their wealth among their children at a parting feast. Warriors who fell on the field of battle, and their wives that killed themselves on their husbands' bodies, were burned on funeral piles together with their arms and the bodies of their enemies, and immense mounds were raised over them (W. Menzel-Germany, P. 24, 28, 53). Old people of Keos after they reached sixty were compelled to put themselves quietly out of the way with a draught of hemlock in order there may be sufficient maintenance left for others. Iranians allowed their old people to be devoured by jackals, wolves and vultures. After reaching fifty old people in India, leaving their estate to their sons, were compelled to wander from place to place and live on begging and on wild fruits and tubers in the forests. Cremation was very generally practised in Central Europe in late neolithic age. Cremated remains have recently been found in Belgium in a neolithic settlement and burnt bones have been met with in long burrows in Yorkshire. Cremation was also practised at an early date in many parts of Germany. Still it is true

that these cases of cremation were to some extent confined to limited regions while in others both practises prevailed upon the same time. The almost universal practice of cremating the dead and placing the charred remains in an urn to be buried in a round burrow or in an urn field seems to have spread from Central Europe, probably from Lausitz region, at the beginning of the late bronze age to almost every part of Europe (14. E. B. Archeology). About 1100 B. C. the traditional date for the Trojan War when Egypt was vexed by the peoples of the sea, Mycenaean and Tiryns (of the Caspians) went up in flames through the invasion of Aryans. The palace at Cnossus was destroyed and never rebuilt or re-inhabited. Iron took the place of bronze, and Aegian art as a living thing ceased on the Greek mainland and in the Aegean isles, including Crete, together with Aegean writing. Cremation took the place of burial of the dead (14. E. B. *Aegean Civilization*). In early Iron Age in Italy, the burials were all cremations; the ashes of the deceased being deposited in a large jar of rough hand-made pottery which was placed in round hole in the ground. Inside the jar were the remains of human bones incompletely consumed by the fire; while in the layer of ashes surrounding the jars were bones of animals together with small objects of use or ornament made of bronze, iron, amber, glass or bone (14. E. B. Villanovans). In the earliest La Tene Period (550-420 B. C.) the cremation is met with in the chieftain's graves. Later it becomes commoner (14 E. B. La Tene). In Germany cremation makes its appearance first in the middle bronze age, and at a later period in the late bronze age practically displaced the older rite of inhumation (14 E. B. *Teutonic Peoples*). In Ancient Britain cremation is represented as the prevailing custom according to Boewulf. The burnt remains were generally, if not always, enclosed in urns and then buried. The urns themselves are of clay, somewhat badly baked (11 E. B. *Britain*). They burn the bodies of eminent persons with some particular kinds of wood. The arms and the dresses, and sometimes his horse, are given to the flames (Tacit. Ger. 27). Shang Dynasty (1766-1122 B. C.) tombs in Honan province, most probably of Caspian origin, show that horses, chariots, the wife

and the servants of the king were strangled to death and buried. With bronze sacrificial swords, helmets, hundreds of spear-heads, beautiful bronze tankard with double covers, one of which could be used as drinking cup much like the detachable top of a modern Thermoflask, and the upper cover was attached to vessel by means of a chain, a magnificent bronze rectangular cauldron, richly decorated with stags and the limestone owl, a tiger-faced kneeling human body, but with feline claws (I. L. N. April 4-1936). Aryans introduced cremation of the dead wherever they went. In Greece it was introduced by Achaeans and Ionians. In Italy by Umbrians and Latins. They used to burn the dead upon a funeral pyre of wood upon which oil, food, clothing were placed. The embers were quenched with wine and ashes placed in a cinerary urn.

11.—MYTHS

Man is a thinking creature. Though by nature and instinct he is an inveterate hedonist, yet to insure his happiness either in the earthly temporary existence or perpetually in heaven in after-life, he has to invent religious myths for his supports. To ward off evils, dangers and diseases, for health, success and happiness he has always to devise means. Religion is the means by which he explains things to satisfy his inquisitive primitive mind. And religion was the philosophy of the ancients. It was the barometer of racial intelligence. And consequently philosophy in medieval periods was based on metaphysical speculations. Now it is becoming the synthesis of Sciences. *Dharma* (religion) means support. √Dhar=to support, to sustain. Skt. Dhara=to hold; Dhar-ani=supporter, the earth; Dharma=which supports, the law. Gk. thro-nos=a support, a seat; thor-ax=a breast plate (keeper), Lat. fre-tus=relying upon; fre-num=bridle (holder in); fir-mus=firm, secure; for-ma=beauty of form (strength). But foreign conquests and racial

amalgamations often confuse and obliterate the landmarks of racial myths. Even intercourse with powerful neighbours generate revolutionary thought ferments which disintegrate and dissolve ancient traditions and myths. And thoughts are more potent solvents than chemical digestants. In Europe it is the Greeks that have been able to preserve their myths through their imperishable art and literary treasures. But the Greek body and mind was a blend of the Aryans superimposed on the Mediterraneans (Minoans) as a base, and mixed with the Caspians (Mycenaeans) and the Alpines (Dorians). But nothing earlier than 7th century B.C. In Iran the racial mixtures have been no less confusing. And Zoroastrian religious reforms and revolutions have effaced many ancient myths, and have put into the shade the rest. Zoroaster lived about 550 B. C. and was patronized by Vistaspa, father of Darius. Seven stone tablets laying the foundation of Persepolis by Darius (515 B. C.) and finished 40 years later by his son Xerxes in the cuneiform character in Elamite, Babylonian and Old Persian have been unearthed. The plaque inscriptions are as follows: Darius the great king, the king of kings, the king of lands, Vistaspa's son, the Hakhāmani, speaks Darius the king: this is the empire I possess, from Sacae who are beyond Sogdia (*Sudugdha* between the Oxus and Iaxartes) and the *Kush* (the Central Nile region in Nubia; Pur. Kusadvipa) from the Indus as far as Sparda (Sparta) which Ahura Mazda has granted to me who is the greatest of gods. May Ahura Mazda protect myself and house". Sayeth Xerxes the king: When I became king there were among those lands which are written above, some who rebelled. Then Ahura Mazda helped me; by Ahura's will, such a land I defeated and to their place I restored them; and among those lands were such where before the *Daivas* (devas) were worshipped; then by Ahura Mazda's will, of such temples of the *Daivas* I sapped the foundation and I ordained the *Daivas* shall not be worshipped; where the *Daivas* had been worshipped there I worshipped Ahura Mazda together with Ritam (cosmic order, the exalted. I. L. N. Feb. 22, 1936). From this it is clear that Darius I (521—458 B. C.) introduced the religious reforms of Zoroaster, the protege of his father Vistaspa, in the great Persian empire, and is likely that Darius might have heard

himself the earnest and eloquent preachings of Zarathustra in his father's court and was inspired by it. But the ancient faith was not entirely uprooted. The *Daeva* worshippers rebelled however in the time of his son and successor Xerxes (485-485 B.C.) to assert their right of sacrificing to their ancestral gods (*devas*). But their rebellion was ruthlessly suppressed by the irresistible military organization of the Achaemenids, patterned after the Khattis whose race and traditions they most inherited and followed, and not only their temples were destroyed, and they were even forbidden to adore their gods. Even in Zend Avesta ancient Aryan *Devas* remain in the backgrounds. The Achaemenides were Saka Kamboja-Kuru people on the base of Parsa (Khatti Puru) tribe. Sakas pronounced *s* as *h* (as Saka = *hakha*), *v* as *p* (*asva* = *aspa*, *svanta* = *spenta*). It was a marvellous racial blend, and their culture was a similar good synthesis. Zend Avesta means simply a collection of chants (songs) like Rik (prayerful chants) *samhitā*. Av. Zend = Skt. *Chanda* = Lat. Canto = Eng. Chants : √Kan = to sing. Skt. Kanva = singer ; Kanva Medhātithi = the name of a Vedic composer. Gk. *can-ache* = ringing sound. Lat. *cantare* = to sing Lat. *canto*, *canor* = chant. Fr. *chant*. Avesta = Skt. *Avasthā* = arrangement by mutual agreement. √Av. = to please. Skt. *ava* (1, 128, 2) = favour ; *ava-taram* = with greater pleasure. Lat. *av-ere* = to desire ; *av-arus* = avarice ; *or-is* = a sheet. Gk. *ai-ein* = to regard. √Sta = to stand, to stay. Skt. *stha* = to stand ; *sthāna* = place. Gk. *esten* = I stood ; *stel-lein* = to place ; *stel-los* = expedition ; *stela-pillar*. Lat. *stare* = I stand. Russ. *stoite* = to stand ; Ger. *stand* = stand. Skt. *avastha* = state, condition, stability, penis ; *avasthāna* = condition, situation ; *avasthitha* = standing near. Av. *Yasna* = Vedic *yajna*. √yag = to sacrifice ; *Yajna* = sacrifice, *Yaj-māna* = sacrificer. Gk. *ag-ios* = holy. Av. *Yast* = Skt. *Yasa* = hymns of praise √yas = to exert oneself ; *Yasa* = praise. Gk. *zelos* = zeal, ardour. Lat. *zelum* = zeal ; *zelotes* = jealous. Av. *Zaotar* = Vedic *hotri* = priest. √Sak = to fasten. Skt. *sak-ta* = attached. Gk. *sat-tein* = to fasten on load. Lat. *Sanc-ire* = to bind by a religious ceremony, to sanction ; *Sanc-tus* = holy, sanctified. Av. *Haoma* = Vedic *Soma*, Av. *Athravan* = Vedic *Atharvan* = fire-priest. Av. *Ahura Mazda* = Vedic *Asura Medhasa* or *vedasa* = All-knowing Lord. It was an epithet of Rudra

(*yatha rudrasya sunavo divo vasanty asurasya vedasah, var. medhasah* (8, 20, 17). The town Ausar (Assur, Ashur, Asura), the ancient capital of Assyria, now in ruins at Kalat Sherghat, built on a rocky headland on the western bank of the Tigris, 40 miles above the mouth of the Lower Job, was founded by Zariku, an Agadian (Caspian), at 2376 B. C. who was the local governor of Dungi of Gutean Dynasty. According to inscriptions of later Assyrian kings Ushpia built the temple of god Ashur in the north-west corner of the city on a ancient branch of the Tigris which flowed by it. The high priests of Ashur made themselves kings of Assyria. And Kassite king Karaindash (1450 B. C.) was compelled to make a treaty with Assur-bet-nisheshu concerning a boundary line About 2100 B. C. Sagittarius was in autumnal equinox and Taurus was in vernal equinox. Being in the same equinoctial colure in opposite direction, Sagittarius (Rudra, Siva, osiris, Ashur) rides over the bull. In the Assyrian standard of Nineveh there is the Archer over the galloping Bull, and that of Sargon 722—705 B. C.), there is the Archer and the Bull. The Assyrian god Ashur and Zoroastrian Ahura Mazda have the steaming wings of the eagle (Aquila), the body enclosed in a ring (Corona Australis which later became the symbol of taking solemn oaths, especially of marriage) and the hands holding bows and arrows. Rudra carries his bow and arrow and is called Asuro Maho (2, 1, 6)—the Great Lord. Ashur was the protecting deity of the Assyrians who were Caspians in race. Asura is the honorific title of many Vedic gods. Is it a borrowed epithet? ✓ Ish (7, 43 : 1) = to move quickly, to be vigorous. Skt. Ishira = Gk. ieros = vigorous. Skt. ishu = Av. ishu = Gk. ios = arrow. Skt. ishu-dhara = archer = Sagittarius. Gk. iotes, Russ. iskate, Skt. icchā = desire; ishta, ishti = desired; Isa = owning, master; isāna = owning, a name of Rudra; isvara = owning, lord (Egypt. Osiris); isā (8, 5, 29) = shaft, lady, (Egyp. Isis); isāni (Baby. Innini) = lady; isvari (Baby. Ishtar) = lady. Asura = lord, archer, owner of Isā-shaft and Ishtar, goddess of war originally, and later of love—Great Mother in all aspects. Archeology has unearthed marvelous inexhaustible treasures of realistic paintings, vivid sculptures and numerous objects, depicting religious, political and social life layer by

layer in Babylonia and Egypt for more than fifty centuries. China in her Annals has preserved for more than 4 thousand years the records of her past history—the graphic descriptions of her arts and sciences, political developments, social institutions, religion and ethics. Though India cannot boast of the archeological findings of Babylonia and Egypt except those of Mohenjodaro, Harappa, and Chanhudaro, nor of the reliable historical Annals and Encyclopedias of China; yet the Vedas, the earliest literary records of the Aryans—though mostly liturgical—are the only faint glimmering lights through which we can focus the obscure facets of myths, manners and vocabularies of the other branches of the Aryans—the Iranians, Greeks, Romans, the Teutons, Khattis and Mitannis, and recover their ancient meaning. For through the supremacy of the Aryans in India Sanskrit has preserved without much corruption almost all the Vedic words, and Brahminism the Vedic rules and rites. Veda means knowledge which is acquired through comparative observation (*darsana*—philosophy=demonstrable science. $\sqrt{\text{vid}}$ —to observe, to know. Skt. vidyā, Veda=Lat. vidi=Gk. oida=O. Sl. vedeti=Ger. witz=knowledge. Gk. oida=I know. Lat. vidrere,—Russ. vidiete—to see. Ger. Goth. witan, wissen=to know. Buddhi is understanding. $\sqrt{\text{bud}}$ =to understand, Sk. bodha=understanding; bodhi=wisdom; buddha=awakened, enlightened. Gk. payth-omai=I search. Lith. budeti—to watch, bund-a=I awake. Russ. budite—to awake). Knowledge (*vidyā*) and understanding (*buddhi*) remove the bonds (*bandhana*: $\sqrt{\text{band}}$ =to bind—Skt. *bandhana* *granthi*=noose, or rope for tying cattle; *bandhanika* a gaoler. Iran. *band*=a bondage. Gk. *peith-ma*=bond; *piotia*=faith Lat. *fides*=fidelity; *foedus*=a treaty. Ger. *binden*=to bind) of ignorance (*a-jñānam*: $\sqrt{\text{jñā}}$ =to know Skt. *jñāna*=wisdom; *jñāni*=the wise; *a-jñāna*=ignorance. Gk. *gnōnai*=to know; *gnostos*=the gnostic=one who knows. Russ. *znate*—Lat. *noscere*, *gnoscere*—Gr. *kennen*=Fr. *connaitre*).

DYAUS (Gk. Zeus; Lat. Dies, Deo, Divus. Divis, Jove; Teut. Divus, Tivi; Anglo-Saxon Tiu; Lith. Dievas, O. Norse. Tivar; Gk. theos) is Sky or Heaven ($\sqrt{\text{Div}}$ =to shine. Skt. *divya*=brilliant; *deva*=god. Gk. *deos*=heavenly; Zeus. Lat. *de-us*=god) Skt. *diva*, *dina*=Lat. dies, Lith. *diena*, O. Sl. *dini*,

O. Pruss: *deina*, Ar. *tiu*=day). Ushas is his daughter (*duhitā*), Asvins are his offspring (*napātā*: 1, 184, 1), Surya, Maruts are his sons (*putras*). Dyaus is a bull (1, 160, 3) that bellows (thunders: 5, 58, 6) and fertilizes the Earth). Dyaus is called *asura* (1, 122, 1). Dyū is our father, and generator (*pita janita*); this great Prithivi (Prithivi, *mahiyām*) is our friendly mother (*bandhur no mātā*: 1, 164, 3). Father Heaven (*Dyaush pitar*=Gk. Zeus-pater=Lat. Jupiter), Mother Earth (*Prithivi mātā*), brother Agni and ye Vasus, bless us. Ye Adityas and Aditi unanimously grant us your manifold protections (6, 51, 5). On his black path (charred forest, he (Agni) shines in burning beauty as Dyau smiles through the clouds (2, 4, 6). Dyau's smiling through clouds is nothing but the lightning flash. When he comes with smiling (lightning), rain drops fall, the clouds thunder (1, 79, 2). Like a dark horse adorned with pearls Fathers have decorated the heaven (*dyām*) with constellations (*nakshatra*: x, 68, 11). Zeus as a sky god was invoked as the deity of the bright day (*amarios*) who sends the rain, the wind and the dew (*ombrios huëtios* and *oureos*). Zeus was called a thundering god (Zeus *keraunos*). And he was himself called thunder stone (*kattaotos*), the sky as a stone vault. Zeus Geleon, the beaming or rather lightning Zeus was the common epithet. In Rome Jupiter was regarded as the god of rain, storms, thunder and lightning (Jupiter Pluvius, Jupiter Tonans). Dyaus is found more than 500 times in the Rîgveda, but usually coupled with Prithivi (Earth) as *Dyāva-Paithivi*. "High heaven (*dyām*) unsupported in space he (Indra) keeps, as well as Rodasi and the *antariksha* (atmospheric region). And he supports the expansive (*paprathac*) earth (Prithivi: 2, 15, 2. $\sqrt{\text{prath}}$ =to spread out, to broaden out, to expand. Skt. *prastha*=expanded, plain; *prithu*=broad; *prithivi*=wide world. Gk. *platys*=Lith, *platus*=broad Gk. *plax*=a flat surface. Lat. *placenta*=a flat cake). There are two short hymns to Prithivi (5, 84): On whom (are) the ocean, the river and waters. On whom with plowings grows food. On whom multiply all that breathes and moves. Let that earth give us food and drink (Av. 12, 1, 3). Let thy hills (*giri*: O. Slav. *gore*=forest) and forests, O Earth, be pleasant to us (Av. 12, 1, 11). The universal mother of herbs is this

eternal earth (*dhruba bhumi*—Av. bumim). On this earth, supported by laws, auspicious and pleasant, may we always roam (Av. 12, 1, 17). Thy aroma has entered into the blue lotus which the immortals gathered at Suryā's wedding. Earth is the source of all fragrance. Make us redolent so that none despises us (Av. 12, 1, 24). It is the (voluptuous) perfume that makes the sexual congress gratifying to men and women; the same in horses, hares, wild animals and in elephants. What glory is a maiden. O Earth unite us with her (Av. 12, 1, 25). On whom stand fixed the trees, the forest trees: the all-supporting Earth do we address (Av. 12, 1, 27). Diverse races of different languages and customs are borne by the earth in different localities. In thousand ways let that (earth) gives us wealth steadily like that of an unresisting milch cow (Av. 12, 1, 45). Prithivī is mother (5, 72, 2; 8, 102, 3). Dyāva Prithivī is a widely capacious pair (*uruvyacasā mahini*), father and mother (1, 160, 2). Dyāva is a bull (*vrishava*) with large quantity of semen (rain), and the earth is a coloured cow (*dhenu*: 1, 160, 3). The rain as semen fertilizes the earth, and the earth becomes productive as a cow is impregnated by the semen of the bull. According to traditions the earth and the heaven were one (possibly as golden egg—*hiranya garbha*: 10, 121, 3. The world-egg (*bhrahmānda*: *Manu* 1, 89) rent apart and have formed the sky with the upper shell of the egg, and the earth with the lower part, and the sun has formed from the yolk; a conception like the Finns). Their marriage is mentioned (AB. 4, 27, 5). The world-egg conception was also Egyptian, from which possibly the Phœnicians borrowed it (11 E.B. *Cosmogony*). Heaven and Earth were called Rodasi as sisters (1, 185, 5). Another name of Prithivī is Go—Gk. Gai (Gaea), Egyptian Geb. In Greek mythology, Gai (Gaea) emerged out of chaos (empty space). Gai was wide bosomed (Gk. *protista*—Skt. *prithivī*). And she bore glens of high hills and raging swells of the sea, the snowy peaks of Olympus and depth of ocean. She embraced Ouranos (Heaven=Vedic Varuna). Out of their union were born many children of whom Kronos was one. Instigated by his mother, Kronos with a flint long sickle with jagged teeth lopped off the penis of his father. From the blood that fell were born

Erinyes (furies) and giants (tempest and storms). The penis fell into the sea; and a white foam spread round the immortal flesh from which was born the lovely Aphrodite (Hesiod : Theogony 115—190). "Ouranos loves to inflict on Gai an amorous blow, and desire seized Gai to obtain the nuptial union. Rain falling from moist Uranos impregnates Gai who brings forth for mortals the food of sheep and the sustenance of Demeter. The verdure of the woods is also perfected by the showers proceeding from this marriage. Of all these things I (Aphrodite) am in part the cause (Aeschylus—Danaides). According to Eustathius, the father of Kronos was Akmon, the Vedic asman (2, 12, 3) meaning flint stone, the friction of which generates fire (Agni). In Avesta and in modern Iranian, asman=sky. So it seems that the Aryans conceived the sky as a stone vault on which the gods rode on their chariots with their fleet steed, Vāyu as charioteer, faster than thought. Not only earth was called Gaea in Greece and Go in the Vedas (Dhenu 1, 160, 3), she was also conceived as a cow. Let Prithivi bless me with land and milk, she who is rich in milk, tranquility, fragrance and joy (Av. 12, 1, 49). Prithivi is the great mother (mahi māta : 1, 131, 1). Mahi is Hellenic Maia who through Zeus became the mother of Hermes; Maia was the goddess of the springs of the Romans.

ADITI is the unbound infinite space, the female counterpart of Dyaus √da=to bound. Sunasepa is bound (*dita*) to a stake (5, 2, 7). Uḍ-dāna=bondage. Gk. de-ein=to bind; diodema=Lat. diadema—a band, fillet. Dyaur Aditi (boundless sky or bright infinite space) is the mother of gods and feeds them with honeyed milk (madhumat payah : x, 63, 2-3). Ushas is the face (anikam) of Aditi, mother of gods (matā devānam=Gk. Demeter : 1, 113, 19); Aditi is the milch-cow (dhenu : 1, 153, 3). Bhārgava Jamadagni, nephew of Visvāmitra says : To folk who understand I will proclaim : Injure not blameless cow (Go)—Aditi, Rudra's mother (mata), Vasu's daughter (duhitā), sister of Aditya and the fountain of ambrosia (8, 90 (101) 15). Prithivi being a terrestrial cow and Aditi as the heavenly cow, Aditi became identified with Prithivi (Av. 13, 1, 38), for earth also is wide bosomed and vast. Here (earth), the wife of Zeus was cow eyed (bowpis potnia Here).

Devi Sukta (x, 125) is recited at the worship of Durgā, riding over lion at the time of autumnal equinox when the sun has passed Leo and has entered into Virgo. This is the season of harvest. Virgo (Kanyā) holds a spike (Spica : Citrā) of barley in her hand. Spica (ear of wheat) is at the distance of 239 light years and has the brilliance 1500 suns. Demeter as a goddess of agriculture is made to derive her name from deai, the Cretan form of Zeai—barley or Ge—earth. But the best derivation is from $\sqrt{\text{div}}$ =to shine. Skt. deva=luminary. Gk. dios—heavenly, Lat. de-us=god; that is De-meter=deva-matā, the mother of gods which was the name of Aditi or heavenly mother (Virgo). The festival of Demeter was originally held in autumn with obscene jests and phallic emblems; and a thanks-giving festival of Demeter (Thalusia) was held in autumn after the harvest in the island of Cos. In Sparta and in Argolis a cow (representing according to Mannhardt, the spirit of agriculture; more likely as her earthly symbol and conception Go=Ge) was sacrificed by 3 women. Demeter is akin to Ge and is sometimes identified with Cretan lion-borne Cybele (14 E.B. Demeter). Cybele was called Great Mother of the gods (Mater Deam Magna, earthly Idaea) for her universal motherhood and for her earthly seat of worship on Mt. Ida in Crete. The cult of the Great Mother together with her sacred symbol, a small meteoric stone reputed to have fallen from the heavens, was transferred to Rome and established in a temple on the Palatine (Livy, 29, 10-14). She was sometimes identified with Ge and Demeter. She was called the Mountain Mother (Dictynna—Parvati) for her sanctuaries were invariably on mountains and frequently in caves. Lions were her faithful companions and she rode on them. Her worship was associated with orgies. She is usually seated on a throne accompanied by two lions (14. E.B. Great Mother of the gods). In a seal impression found at Knossos of 1500 B. C. the *Mountain Mother*, wearing typical flounced Minoan skirt and holding a sceptre in her right hand stands on the peak of her own mountain, flanked by two guardian lions. It is said that Demeter became enamoured of Iasion (Vivasvan =the sun) in a thrice ploughed field in Crete and the fruit of their union was Plutus (wealth). The Romans received

from Sicily the worship of Demeter, to whom they gave the name of Ceres (Hindu **Sri**). Like Prithivi, Gk. *Ge*, Tellus Mater was the Earth mother of the Romans as **Hertha** (Nerthus) in Germany. Tellus (Terre : √ trish = to thirst ; trishnā = thirst ; Gk. *trasia* = a drying kiln. Lat. *terra*, *tersa* = dry land) was the Roman goddess of marriage, fertility, like Demeter. Hertha (Nerthus from Sk. *nritya* = dancing) Mother Earth (Gk. *era* = Skt. = *urvi* = Ger. *erde* = O. Ger. *herda* = Goth. *airtha*. Hertha might have also been derived from Ger. *herd*, O Ger. *herda* = hearth ; Goth. *haurja* = burning coals ; Lith. *hurti* = to heat an oven) is carried in a chariot, drawn by yoked sacred cows. In Heligoland (Holy Island) after she is bathed by slaves, slaves are drowned in the lake (Tacit. *Germania*, 40). The Angles gathered from all quarters to her temple there for her worship which was attended with orgies (14 E. B. Hertha). Egyptian Nut (night sky) is in the shape of a cow, her body covered with stars. Isis (Hindu *Isā*) was identified with the cow, and Osiris with that of Apis Bull with light and dark colourings (equinoctial Taurus). The queen (Rāstri) of the heaven (Virgo : though it is ascribed to *Vak* and nowhere it is found mentioned in the hymn, and moreover it is read at the worship of Durgā says : "I roam with the Rudras and Vasus, Adityas (sons of Aditi = luminaries of the sky) and *Visvadevah* (vis = community ; hence universal ; *visva-devah* = universal gods or all community gods). I hold aloft both Mitra and Varuna, Indra and Agni and Asvins (x, 125, 1). I support waxing Soma ; I sustain Tvashtar, Pushan and Bhaga. I give wealth to the earnest sacrificers who offer me oblations (x, 125, 2). I am the maker of kingdoms (*rāshtri*) ; I am the gatherer of wealth. I am most generous, and first of those who deserve worship. Thus gods have established me in many places to enter and to abide in many homes (x, 125, 3). Through me they eat (nourish), breathe, see and hear that is spoken. They know it not, yet they live through me. Hear one and all the truth as I declare it (x, 125, 4). I bend the bow of Rudra that his arrow may strike the rebel against law (brahma-dvushe = hater of prayer, devotion or order) for the people I fight battles. I penetrate into heaven and earth (*dyavā-prithivi* : x, 125, 6). I shine

over the head of the Father. My home is in the waters and in the ocean. Thence I extend over all existing creatures and touch even yonder heaven (dyam) with my forehead (×, 125, 7). I breathe like the wind and I hold together the universe. Beyond the heavens and the earth I am great in my might and glory (×, 125, 1-8). This Vedic conception is quite similar to that of Egyptian Isis, Sumerian Innini—Lady of the Heaven, Khatti Mā (Egypt. Maat—Skt. matā), Babylonian Ishtar and Phœnician Astarte, the great mother of the mountain, who riding on lions killed the enemies with arrows; Demeter and the great Mother of the gods (Metera Theon) who is well-pleased with the sound of flutes and the outcry of bright-eyed lions with echoing hills and wooded coombs. Artemis was also the Virgin Mother Goddess of the Caspians. Scythians offered in sacrifice to virgin Artimpassa (Artemis) all ship-wrecked persons and all Greeks compelled to put into their ports by stress of weather (Herod. 4, 103). Human sacrifice was offered to her. Lion, owls and serpents were sacred to the Caspians. Artemis was the war goddess of the Caspians. Caspians conceived Sagittarius as a woman armed with bows and arrows. She was the huntress. In the Greek legend it is said that Artemis aimed her arrows at Orion, a handsome hunter as he attempted to rape Eos, the dawn maiden and changed Eos into a deer, because she was bathing naked. Prajāpati (Orion) being enamoured of his daughter Ushā followed her. Ushā changed herself into a female deer, Rohini (Taurus). At this Rudra (Sagittarius) being incensed at the father pairing with his own daughter aimed his arrows at him (A. Br. 3, 33). When the father desiring copulation united with his youthful (daughter) in passionate ardour he discharged into the pleasure receptacle of her yoni a good deal of semen which overflowed (spring showers : ×, 61, 6). The cult of Artemis, Ge, Demeter, Cybele were grafted on each other and modified. The mysteries of Demeter (Eleusinian ceremonies), Ge at Phlye in Attica, Artemis Mysia of Sparta, possibly of Pelasgic origin (11. E. B. Mystery) are similar to those of Isis, Astarte, Cybele (Pur. Karāli—Kāli) and Bhavāni, slightly modified here and there according to local circumstances. Generally religious mysticism and ecstasy are associated with

drinking, eating cakes, sanctified meat, dancing and sexual licentiousness. The mysterious festivals of Demeter were known as Eleusinia and Thesmophoria. Orthic Artemis of Sparta of the 7th century B. C. is winged (with owl feathers which was sacred to her. Owl = Corvus very near to Virgo); she has prominent nose like the beak of a bird. Before her are seated two owls. In her shrine Spartan boys were flogged. Spartan bronze votive offerings include bull-head, pendants, a lion broach, double axes (of the Mycænians), double-mouthed serpents, a sphinx with a pleasantly humorous face in soft limestone (I. L. N. Oct. 16, 1936). Temple of Ishtar at Mari is guarded by bronze covered lions (I. L. N. Nov. 28, 1938). There was a temple of Ishtar at Mari between 3000 to 2000 B. C. There were 15 bronze life sized lions to guard the entrance of the marriage chamber of the goddess. A backed clay relief of Ishtar of Larsa Dynasty (before Hammurabi 2100 B. C.) is now in Louvre Museum. The figure is nude with fine oval face, almost aquiline nose, thin lips, seductive well-developed globular breasts, voluptuous contour, snake headdress, winged and with birds feet, standing upon two reclining lions, holding in her hands Yoni and Linga symbols (sistrum). There are two owls standing by her sides. Owl was also a favourite of Minerva (Etruscan Menrva: I. L. N. June 18, 1936). Athena's Laurium owl is engraved on ancient silver coin—Drachma. Ishtar Kihitum sanctuary at Ishali of about 2100 B. C. (Abraham's time) shows that Ishtar steps with one foot on the head of a lion and holds in her hand a sickle-shaped sword. An owl is flying before her. And in the right and left of the stele a cow is sucking a calf and there are two scorpions round a tree. There is an alabaster figurine of monkey. In two large cauldron shaped vessels there are representations of snakes, scorpions, tortoises, birds and dogs. Possibly also they contained live snakes. For inside them at the bottom, bones of birds, small animals and sherds have been found. There is also an unbroken saucer which possibly contained water. The bearded men are carrying kids for sacrifice (I. L. N. Sept. 5, 1936). In Homer's time Artemis appears as a goddess of death (Kālī, Bhavāni) and as a goddess of war. To Artemis 500 goats offered were yearly by Athenians as a thanks giving com-

moration of the victory at the Marathan (14. E. B. Artemis). A primitive mother goddess of Cyprus with a baby in the crook of her left arm, her neck stretched with many encircled ring-necklaces, has been found in Vounos necropolis of early bronze age (3000-2000 B. C.) A bronze figurine of the lion-headed goddess Sekunent with her baby Nefertem on her laps, she is exposing her left breast with her right arm (1500 B. C.). A beautiful carved granite relief of Isis of Palae-Alpine type with her son Horus on her lap, holding it with her left arm and feeding it from her left breast with her right hands found in the temple of Karnak (1000 B.C. : I. L. N. Dec, 26-1936). In a Khatti votive relief at Boghaskeui there is broadhipped seated female with a child on her knees called, Umma (Assyrian and Sabaean Umma=mother), Puranic Umā, consort of Siva. As a Great Mother the image of Artemis in the magnificent temple of Ephesus was covered with numerous breasts. Aditi (Pur. Adyā) is perhaps the consort of the Babylonian sky god Adad (Syrian Hadad : Pur. Adinātha), god of thunder and lightning. Kanyā (Virgo) makes her appearance in heaven (X. 39. 12). A nude relief figurine on a gold leaf with exaggerated renderings of sex organs but with abnormal relation of extremities and absence of articulation of joints has been found at Loriya tomb of 7th century B.C. A similar cast has been made among the relics of Piprahva stupa of Maurya Period. The Mediterranean Mineaans called her Meni, Menu (Mānini), passionate (Kāmini, Kāmarupā, Kāmesvari) and fond of wine (Madālasā), the goddess of fortune (Mahālakshmi) of the Nebataeans. The Semites named her Allat, Illah, Rusā, Assā, the maker of destiny, associated with Venus (Tarā). Allat, Illah was represented by a square or triangular stone. The southern Semites called the planet Venus Athtar. From Illah, El, Elohim and Yaw, Yeoveh of the Hebrews and Allah of the Islamis developed. Aramaic Yaw occurs with the name Hebrew chief Hamath who was captured by Sargon in 720 B. C. The thunder god Adad (Adi-nātha) is incised as YHW just above the hollow in his outstretched hands, sitting nude upon a winged wheel in a coin from Gaza of fourth century B. C. Yaw and Anat with faces on opposite directions but on joined necks (Ardha-narisvara=Androgene) are also on coins of Gaza.

Anat. (Anandā. Anantā) as a name of Ishtar occurs in the Hammurabi period. Egyptian 19th Dynasty sculpture shows Anat standing nude (Digambarā) on a lion (Simha-rathā), a very pretty voluptuous figure with well developed hemispherical breasts but thin waist, holding in one of her outstretched hands lotuses and in the other serpents or spikes of barley. She is also Kādash, Babylonian Quadishtu, Phoenician Quadisht, Qudesh, which is a term for prostitute as well as the title of Ishtar, the queen of Heaven (rāstri) and mistress of the Gods (Deva Vallabhā). A nude clay figurine, sometimes with doves or serpents, has been found in large numbers from great antiquity from Aegean areas to the Persian shores, and was kept as a house-hold deity for love (Premā), blessings (mangalā), fertility (Annapurnā, Shasthi), for destruction of the enemies and for health and welfare (Kalyāni). She was the Aphrodite of the Greeks^a. Isis of the Egyptians, and Issuri and Ishtar (Isvari. and Isāni) of Syria and Mesopotamia, Teraphim of the Hebrews, Ishtar that peers from the window to attract youths (Mohini), but bringing woe and distraction of their mind by unrequited love was called Kilili (Kālī, Mahāmāyā = a great illusion) in Babylonia and Assyria. In the temples of Mylitta (Matrikā, Mangalā, Mandalā) every marriageable maiden had to offer her virginity to a stranger before she could be married. The defloration was made in Rome by placing the maiden on the lap of Priapus and in many countries by priests or kings. Perhaps blood-shed was regarded sinful and dreaded, being antisocial and inhuman. That is why perhaps in the ancient world the menstrual woman was regarded unclean and isolated; and consequently the bloodshed through hymen fracture was allowed to be made by strangers or priests who thus took the sin of others; or because woman was regarded as a communal property, and a representative of community exercised the right before husband could enjoy the marital monopoly; or the first fruit of love was given to the goddess of love and fertility for receiving her blessings.

AGNI = Lat. ignis = Lith. Ugnis = O. Sl. Ogn = Sl. Ognj - Khatti Agnish = Gk. agnos (holly: √Aj = to move. Skt. aja - a quick-mover, the goat; the vehicle of Agni. Lat. ago, ageni = to drive, Gk. ago, ignitus = to ignite, agein = to drive.

√An—to breathe. Skt. anila=air, an-ala=fire. Gk. an-emos=wind. Lat. an-imus=spirit) is a messenger (duta) of the gods (6, 15, 9) and lord of house-holds (griha-pater: 1. 60, 4) and who dwells in every abode (7, 15, 2). The multifarious uses of fire have been the main factors of human progress. Fire is the basis even of modern civilization. It is the background of practically all forms of modern manufacturing and transportation. To the primitive man the blaze of fire, not only gave warmth to the body and protected it from cold and winds, it softened indigestive fibrous food and made it palatable and thus facilitated its growth and power. It warded off wild beasts and thereby made cave life safe, comfortable and warm for women and children. Thus fire became the symbol of hearth, home and domestic felicity. Fire was the most sacred and the primary god of the Aryans. Fire makers either by friction as by a fire-drill or by percussion of two flint stones, and fire-preservers by the timely addition of fuel and fats became the high-priests and leaders of the community. Because they rendered the most useful and valuable service to the community, for a home without the uses of fire is hard to conceive. Thou Agni dost shine (dyubhis: as a fiery scorching sun, kindling inflammable substances like dry leaves); thou dost twinkle from far (āsusukshanis: as a constellation Ara=the Fire Altar); thou art born from the water (adhyas: from the clouds as a lightning, striking a combustible dry stem of a tree); thou art generated from stones (asmanas: through flint percussion); thou (art born) in forest trees (vanebhyas: through friction of wooden fire drill); thou art born from the herbs (oshādhibiyas: catching fire through any of the above sources); thou lord of men art generated pure (2, 1, 1). "Generated in the highest heaven (parame vyomany) Agni is known as Mātārisvan (constellation Ara,=Fire Altar) when he is kindled through his power and majesty, his splendour shines from the heaven to the earth. (1, 48, 1). Its glimmer is unfading (ajara); his beams are fair to look upon. His face is lovely and shines with beautiful sheen. Like a stream the light of Agni through the nights glimmer sleeplessly and unfadingly, (1, 143, 3). White-hued and thundering he (Agni) dwells in splendour, loud-voiced and lasting, the most youthful

(Yavishtha = Hephaestus : thunder and lightning ; 6, 6, 2). O Agni, thou art the unfading star—Surya—in the heaven to give light to man (X, 156, 4). As fire produces fire, Agni is called Tanunapat—offspring of his own body (1, 13, 2). As lightning is generated in clouds, Agni is called Apām-napat—offspring of water (2, 35, 1). Agni thou art kindled in the bosom of water (apām : 3, 25, 5). Between two stones (asmanor antar) Agni is generated (2, 12, 3 : by percussion). As an infant (sisu) newly born the kindling sticks (arani) here brought thee (Agni) to life, the supporter of the tribes of man and of orderly sacrifices (5, 9, 3). The fire drill is called Pramantha (Karma-pradipa : 1, 75 : $\sqrt{\text{mat}}$ = to whirl, to churn. Skt. mathana = a piece of dry wood which is rapidly whirled round in another dry stick to produce fire ; mathana = churning ; mathita = churned buttermilk. Lat. mit-tere = to throw, missile ; Lith. nosti = to throw. Russ. metale = to throw. Gk. mit-os = a thread of the woof). It is said Prometheus stole fire from heaven. It is more reasonable to suppose that it is the generation of fire through the friction of fire sticks. It is also said that Prometheus created man out of earth and water. Agni is also the creator of all things (*bhuvanā janayann* : 7, 5, 7). Agni is called *yavishtha*, ever youthful : Hephaestus) for “Agni when old and worn out becomes young again (2, 4, 5). “He who was worn out at night becomes young again (1, 144, 4) : Hephaestus is said to be lame, for the fire spreads slowly by jumping movement ; because he represents the lightning he is said to have been hurled from the heaven by his irate father Zeus ; because he is the forge-fire, he is said to be a smith and a clever artisan. The Roman Hephaestus is Vulcan. Vulcan’s festivals were Fornacalia or Furnalia, he being the god of furnaces. His temple was built by Romulus with that of Vesta and who planted near it the sacred lotus tree (*Zizyphus lotus* ; *Jujuboe italicoe*) which still existed in the days of Pliny. Vulcan is derived from the same root as Skt. Ulka = spark of fire ; burning meteor. Varcas also means light and brilliance. O Agni thy light (Varcas) in heaven (as a constellation Ara), on earth (prithivyam ; volcanic fire), in the plants (oshadishu : for generating fire through friction of

wood and fuel for keeping fire) and in waters (apsu: lightning. (3, 22, 2). According to Avesta (17 Yasna, 1-11) and the Hindus there are five kinds of fire, (pancāgni): *Beresi-savanah* (baravāgni-volcanic fire or fire from natural gas); *vohu-fryāna* (Skt. *Jatharāgni*-animal heat: through oxidation of the tissues); *urva-zista* (Skt. *indhana*; fuel from plants); *vazista* (Skt. *Vaidyuta*=lightning); *spenista* (hearth fire). Let this offering be for the fires which are in the waters, in Vritra (Hydra), in man (as animal heat), in pyrites and those which are in plants (for ripening fruits) and in trees (to be used as fuel: Av. 3. 21. 1). O Agni, what light of thine is in heaven, on earth, in the plants and in waters (3, 22, 2). Bhuranya (1, 68, 1; 6, 62, 7 means clever and active. Bhuranya is an epithet of Agni (1, 68, 1) and of Asvins (6, 62, 7). In Gk. mythology we have one Phoroneus, son of Melia (ash-tree) out of whose wood by friction fire was generated for which ash tree was not only sacred in Greece but also the Germany, and Inachus (a river in Argos where the Aryans possibly settled) who was the ancestor of the royal family of Argos and builder of towns (asty phoronikon) as Agni is *Vispati* (8, 23, 13) and born alive out of dry wood (1, 68, 2). Phoroneus became goddess Feronia in Italy. At her annual festival and fair, the priests (Hirpi) walked barefoot over burning coals and people used to offer her the first fruits of their fields. Angiras (I, 31. 1.)-is burning coal-ember. The fire and its curling smoke are called messenger (duta) to gods (3, 5, 10: Gk. *aggelos*, Lat. *angelus* = a messenger. O. Per. *angara* = a mounted courier of Darius time. Angel is divine messenger from Lat. *angelus* messenger) like Agni. Athari (4, 1, 8) is flame. Atharvan (6, 120, 9=fire-priest; Atharyu (7, 1, 1, flaming. Av. Athar, atar-fire; Gk. *aitho*=flame. Men have brought banners-the quick messenger of Vivasvat who comes towards all men, who is brilliant (*bhrigavānam*) in every settlement (4, 7, 4). When Matarisvan had produced him by friction, the noble one who was brought to many places came to every house. Then the brilliant (*bhrigavānah*=Agni) undertook the messenger-ship as for a mightier king, being attached to him (1, 71, 4). Wise Bhrigus (Bryges) discovered Agni (X, 46, 2) and

established it among men (1, 58, 6) and preserved it in highflaming wood for service and adoration (6, 15, 2). The most excellent luminous (*uttama rocanānam*) Agni supported with his flames the height of heaven (lightning). The Bhirgus (Bhryges) kindled the fire when Agni lay hidden (3, 5, 10). Aur-ora = dawn. Hestia was the goddess of fire and the domestic hearth. Hestia was a maiden divinity. As the giver of domestic happiness she dwelt in the inner part (hearth) of every house, and hearth was recognized as a place of refuge for suppliants. As the goddess of fire Hestia was invoked at the commencement of every sacrifice, the first part of which was presented to her. Before eating, milk, honey and cakes were offered to Hestia. She had few temples in Greece, but in every prytameum (town-hall) in the towns of Greece she had a sanctuary with a statue and a hearth upon which burned the sacred fire, lighted by friction or by the concentrated rays of the sun. *Vesta* formed the underlying centre of the religious feeling of the Roman mythology. Vesta was not represented by any statue or image in her temples, but a perpetual fire burned on her altars and each Italian city or community had raised an altar to her. The Vesta of the Roman Empire had her temple at Lavinium, on the via Appia, 20 miles from Rome, and hither the consuls and other high officials of the republic went to offer up their sacrifice before entering on their duties. The Vesta of the city of Rome had her temple in the Forum, near that of the Penates and here she was served by her own priestesses—the Vestal Virgins—and a festival—the *Vestalia*—was celebrated in her honour on June 9. The number of the vestal virgins was originally four, but afterwards six. They were chosen by the pontifex maximus when between 6 and 10 years old, and they served the goddess for thirty years, spending 10 years in learning their duties, ten in the actual performance of them and ten in teaching them to the novices; after the fulfilment of these services they were at liberty to marry. The Vestals were chosen of free-born respectable parents, having both parents alive, and free from physical and mental defects. She was dressed in an ancient costume to that of a *bride*. Their principal duty consisted simply in keeping alive the sacred fire on the altar of the goddess, day and night and thereby the guardianship of the

holiest which the Roman life contained was entrusted to them. The extinction of fire was regarded as emblematical of the extinction of the state; on such occasions and once a year (March 1) the fire was rekindled by friction of wood. Household vestal hearth fire was usually attended by daughters. Though it was the householder's duty, as he and his sons were out most of the day and his wife would be busy with the housework, much of the actual preparation of the food also fell upon the daughters as they became old enough. The girls originally attended to the hearth fire as soon as they became 6 to 10 years old for 5 years till they were old enough for betrothal and marriage. Herda (hearth) was sacred in ancient Germany. It was placed in the right corner of the dwelling. The householder kneeled before the hearth-fire on rising. Maidens prayed to her for securing husbands. Criminals made confession before holy Herda. Loki (Lucifer) was the god of hearth-fire of the Norwegians who poured cream of milk with shouts of Loki. It seems Loki was the god of smithy of the Teuton, as Vulcan was that of the Romans and Hephaestus of the Greeks. To the Lithuanians hearth was the Ugnis Sventa (sacred fire). In the evening when covering it up, even in the 17th century, they used to say—*Szwentā Ponyke ugnela* (sacred little fire), I shall cover thee very nicely that thou be not angry with me. In Samland even between 1526—1530 A. D. the bride used to address the fire, "O my dear sacred little fire (*oho mey mile swente panike*). Among the Lithuanians there were two kinds of fire—male and female. Female fire was called *Ponyke* and the male fire *Yagnanbis* (Skt. *yagnabhuja*—enjoyer of sacrifices=Agni. A. Carnot: *Les Indo-Europeans* P. 203). *Gibil* (Juhurala) and *Nuske* (*Damun-nas*) were the Babylonian fire gods. *Vāyu* is Breeze, *Vāta*=wind. \sqrt{Va} =to blow, Skt. *Vātā*=Lat. *ven-tus*=wind. Lith. *wegas*=wind; *wetra*=a storm. Ger. *wehen*=to blow. *Vāyu* is gentle breeze, refreshing and purifying from the womb of space (I, 134, 4). It is the friend of Agni, for it stirs up fire. Because breeze breathes, it is called *anila* (\sqrt{An} =to breathe. Skt. *anala*=fire that breaths. Gk. *an-emos*=wind, Lat. *anai-mus*=vital breath. Goth. *uz-anan*=to breathe out; Icel. *anda*=to breathe; *ond*=breath). *Vāyu* is an important deity of

the Zoroastrians (14 Ram Yast). Vāta is the storm wind (Ger. wut=fury; Lat. Vat-es=divine; venta=wind. It is the Hellenic Boreas, the god of the north wind and Russ. Burya of storm. Venti was personified. Vata=Whotan=Wodan, Woden of the Anglo-Saxons and Odin of the Teutons; originally it meant the *furious* wind (Ger. wut=fury) and thence mighty warrior. Later Odin headed the Teutonic pantheon and prisoners of war were sacrificed to him. After Woden, Wednesday has been named. Pavana is the gentle vernal breeze, laden with fragrance of flowers, the Roman Favonius (corresponding to Gk. Zephyrus) which produced flowers and fruits by the sweetness of his breath. Pavana delightfully comes with soft *murmuring* sound. ✓Mar—to murmur. Skt. mar-mara=rustling of leaves. Gk. mor-myasein, Lat. mur-murare, Ger. murmeln—to murmur. Vāyu is the light footed messenger of the gods. Vāyu is represented by Arcturus (Svati) in Bootes. It comes on the meridian at midnight in the later part of April. It is 51 light years distant. It is a yellow star of the north, the fourth in order of brightness in the entire heavens, and has about 100 times the brightness of our sun. Vāyu is the Amorite Rammon who rides triumphantly on the air. Enlil (Anila) was their storm god. YAMA and YAMI as well as Asvins are the two pairs of twins of Saranyu (the sky of the last part of the night: Gk. Erinyes), daughter of Tvashtri (identified with Visvarupa: 3, 15, 19=Scorpio) and Vivasvat (Aries). Asvins are Pegasus and Equuleus. Yama and Yāmi are Perseus and Andromeda. "Tvashtri makes a wedding for his daughter, whereupon the whole world comes together; the mother of Yama having been wedded, she who is the wife of the great Vivasvat vanished (x, 17, 1). They hid the immortal one from the mortals, having made one like her, they gave her to Vivasvat; when that had taken place, she bore the two Asvins, and Saranyu left behind the two twin couples (divā mithunā: x, 17, 2). Yāska explains it by saying that Saranyu after having given birth to a twin—Yama and Yāmi—ran away in the form a mare. Vivasvan then also assumed an equine form, coupled with her who then gave birth to the twin—Asvins. In Greek legend, Demeter's daughter Persephone in order to escape Poseidon assumed the form of mare. But Poseidon changed him-

self into a horse and coupled with her who gave birth to a horse Arion and Despoena. At Arkadian Phygalia there was a bronze statue by Onates, representing goddess (Erinyes) with a female body but with the head and mane of a horse and surrounded by serpents. Demeter was also called Erinyes and her lover was Iason (Vivasvan = Aries). Who died the first of mortals, who went forward the first to that world, serve with offering the king Yama, the Vaivasvata, the gatherer of men (Av. 18, 8, 13), Fair Yima, the great shepherd, the first mortal, son of Vivanghat (*Vend. Farg.* 2, 1-2). Yima also is a Twin (Yasna : 30, 8). Death passes through the path of Yama (1, 38, 5). Yama and Yāmi are twins (x, 117, 9). Owl (Uluka) and dove (Kapata) are the messengers of death, Yama (x, 165, 4). Two four-eyed (four-eyed bitch : Av. 4, 20, 7) broad-nosed, brindled (sabala) brown (udumbala) dogs (sarameya : Canis Major, Canis Minor) guard the pathway (the Milky Way) of Yama (Perseus). Agni is the friend of Yama, for by fire consuming the dead, he sends the purified soul to Yama (x, 16, 9). Yama with the gods lives on a tree (X, 135, 1; the lunar dark tracings were regarded as branches of a tree). Yama and Varuna (X, 47, 7), Brihaspati (X, 13, 4) and Agni (X, 14, 3), and Pitris carouse with ever youthful damsels (Svadhā : x, 14, 7; stars). In the Avesta a four-eyed yellow-eared dog keeps watch at the head of the Cinvat Bridge (Milky Way). In ancient Greece and in China a coin was placed in the dead man's mouth, intended as a fee for Charon (Canis Major), the ferryman for ferrying the soul over the river Styx (Milky Way). Zapoteks killed a dog and the Garos still sacrifice a dog to act as a guide for the dead man when they burn its body. Sārameya is Gk. Hermejas and Saramā is Gk. Hermes. Hermes as the herald of the gods was employed to conduct the shades of the dead from the upper into the lower world (Virg. Aen. 4, 242). The Heavenly Dog (suna divyasya) flies in the aerial region and the three Kālākānjas (three asterisms in the belt of the Orion) are set in the sky (Av. 6, 80, 1-3). The dog (Canis Major) hunts the boar (Lepus) and bites the ears of Vrisakapi (Monoceros : x, 86, 4). The spotted (sarvara) dog is Gk. Cerberus which guarded the River Styx which had to be crossed by the dead. The Egyptian jackal headed Anubis watched

swifter than thought. At the yoking of their horses *Divo Duhitā* (Ushas = Eos = dawn) is born (\times , 39, 12). Asvins follow after Ushas in their shining car (8, 5, 2). They wear lotus garlands (\times , 18, 4, 2). Their car moves round heaven (1, 180, 10). Asvins rescued from the jaws of a wolf (*Lepus*) a quail (*vartika*, Gk. *ortyx*). Pegasus in an ancient constellation. The figure represents the forward half of a winged horse. The centre of the constellation is about 20° north of the equator and 4 bright stars in it form a large square. Equuleus represents a horse's head, lying west of the head of Pegasus and its bright star is of fourth magnitude. In Pegasus there is a cluster of 162 nebulae, mostly at a distance of 103 million light years or more and each contains enough material to make a star island of thousands of millions of stars. With Alpha, Beta and Gamma Pegasi with Alpha Andromedæ (Alpheratz = Uttara Bhādrapada) the Great Square of Pegasus is formed which is conspicuous in the sky like the Great Bear and the Belt of Orion. Merkab at the junction of the wing and the back the Pegasus is known as Purva Bhādrapada, Gamma Pegasus (Algenib) = Gopada. According to Greek legends, Pegasus is the winged horse of the gods. Medusa, the youngest of the Gorgons, once a beautiful maiden was loved by Poseidon who often assumed the form of a horse or *ortyx*, and Pegasus saved Ortyx from the wrath of Athena who transformed Medusa into an ugly monster. It is said that 9 sisters—Pierides were rivals of the Muses. When Muses broke forth into song, the sea, sky and rivers stood still to listen and Mt. Helicon rose heavenward with delight. Poseidon advised the winged horse Pegasus to stop the ascent of the mountain by kicking it. Pegasus obeyed and from the spot where he kicked a fountain called Hippocrene (horse-spring) gushed fourth which was ever after the inspiring fount of the Muses. The defeated Pierides were changed into Ortyx. Pegasus was employed by Eos or Aurora, the goddess of morning. "Ye (Asvins) poured forth from the hoof of your stronger charger a hundred jars of wine as from a strainer (1, 117, 7; 1, 117, 6 : *Kakshivat Dairghatamasa*). Asvins with their three wheeled car (*tricakra*) herald the advent of the vernal season (*madhu-vāhana* : 1, 15, 7, 3; 1, 90, 6). Pegasus in May appears in the morning sky on the

ecliptic with the Venus (Vena : 1, 34, 2). Three wheels are the three asterisms—Markab, Scheat, Enif. AHI BUDHNYA is Cetus—the Dragon of the deep (Budhnya-Gk. python, from pythom—bottom). "With praises I sing to Ahi Budhnya who stays in the upper region under the River (Nadi—Eridanus : 7, 34, 16). Let not Ahi Budhnya harm us or refuse to accept the sacrifice of this servant (7, 34, 17). Cetus (Gk. Ketos) is the largest constellation, situated at the middle bend of Eridanus. It contains two second magnitude stars and nine of third and fourth magnitudes. The variable binary star Omicron Ceti (Mira Ceti) is its chief glory. Mira Ceti is so large that 30 million suns can be packed inside it. But it has a faint white companion, thus forming an incongruous unequal pair. The light of Mira Ceti continually changes with a period of about 11 months and exhibits extraordinary fluctuation of brightness. From a faint telescopic star of ninth magnitude Mira slowly brightens up to sixth magnitude when it becomes visible to the naked eye. Within 4 months it becomes a second magnitude star when it gives 500 times more light than in ninth magnitude, for which it is called Mira—wonder-star. It remains 1.8 star for about a month when it begins to decline and in five months it is again in the lowest ebb of its life.

SARASWATI is Eridanus. Sarasvati dwells in high heaven (5, 43, 11). Sarasvati both dwells in sky and in earth (6, 61, 11). Sarasvati in divine (*asuryā* : 7, 96, 1). Eridanus is the serpentine celestial river. It is the longest constellation of the sky. It contains nearly 800 stars which are visible to the unaided eye. Yet none of these except Achernar (the End of the River) is brighter than third magnitude. From Achernar it flows away to the north through a succession of bright stars. Achernar is at a distance of 70 light years and has the brilliance of 200 suns. The Egyptians had their divine Nile, and the Babylonians their divine Euphrates in the heaven. Nāva is the Argo Navis on the Milky Way (*Samudra*) and named after its ship-like resemblance with hull, keel, stern and sail. "O Pushan, thy golden ship (Argo Navis) travels across the ocean (Milky Way) in the sky (*anirīksha* : 6, 58, 3). Argo Navis is the largest constellation in the heaven and is very conspicuous in the southern sky. The brightest star of Argo

is Canopus (Pur. Agastya) which is second only to Sirius in brilliance. Nāva=Gk. Argo made by Argus. In Egyptian mythology Horus (Pur. Hara) as a ferryman (Conopus: in Hindu astrology Agastya Yātrā to the south is in auspicious) ferries the Ka of the dead on the boat (Argo Navis). PITRIS (ancestors=Manes) dwell in glowing light (\times , 15, 9). They decorate the sky with constellations (\times , 68, 11). They are self-luminous and rise in the dawn (7, 76, 4). Pitris are situated in the centre of the heaven (\times , 15, 14). The Pitris are the guiding spirit of Maghā—Regulus, the brightest star in Leo. In Egyptian mythology, Osiris, the ruler of the dead, is represented by a lion. Leo being associated with summer solstice, there is a high mortality in this season of epidemics. The Hindus still make offerings to their Pitris (ancestors) in the new moon of *Simha* (Leo). Leo is an ancient zodiacal constellation, containing Regulus a star of magnitude $1\frac{1}{2}$ and two stars of second magnitude. It is easily found, for the pointers of the Great Bear point southerly to its brightest star. The stars in the body of Leo form a characteristic trapezium and those about the neck and the mane make a sickle. Regulus (Ruler = *Maghā*) is in the head of the Leo and is at the distance of 56 light years and has the luminosity of 70 suns. The second brightest star in the sickle Gamma Leonis (Algeiba) is a double star and exhibit interesting contrast of colour. The brighter partner is a second magnitude star and its fainter companion is of the fourth. From the direction of the Sickle sometime showers of shooting stars come, known as Leonids. Beta Leonis (Denebola = *uttara Phālgunī*) is at the end of the Leo's tail. Baby. lion-headed eagle—Nin-Girsu (winged lion) is Hindu Narasimha, Egy. sphinx, Avestan Nairyosangha. HAMSA is the Cygnus (Gk. Leda). In the Milky Way is the heavenly swan clothed in light (4,40,5). The swan is golden-pinioned (*hiranya parnā*) and is seen in the morning sky, (4,45,4) Hansa moves radiantly in Celestial Water (*apām divyānam*—Milky Way: \times , 1249). In the Greek legend Zeus in the shape of a swan seduced Leda. Cygnus is a northern constellation in which Beta Cygni is a fine coloured double star, consisting of a yellow star of 3 mag. and a blue star of $5\frac{1}{2}$ mag. lying at the beak of the long outstretched neck of the swan.

Alpha Cygni (Deneb) at the distance of about 600 light years has the luminosity of 10,000 suns. The Amorite goddess **Bau** (Gula) rides the celestial waters (the Milky Way), seated on two ducks, symbolizing certain stars. The Hindu goddess of learning—Sarasvati rides over a swimming swan. **VANA-VINA** is the northern constellation Lyra in the shape of a harp. It causes the sound of the waves and whistlings of Maruts (1,85,10). Vina (Vs. 6,1,4,1) is a divine instrument. Hermes, the messenger of Gods, was fond of playing on Lyre. Narada (Cepheus), the messenger of gods, friend of Krishna (Hercules), is fond of playing on lyre. Egyptian dwarf Bes (Cepheus) had his favourite lyre. Lyra contains the fourth brightest star in the sky—Alpha Lyra (Vega = *Abhijit*). It is at a distance of 26 light years and has the luminosity of 50 suns. Beta Lyrae is an eclipsing Variable with a period of 12.92 days; the system presents some abnormal features perhaps due to the low densities of two components. Epsilon Lyra is a double. As two components are twentieth of a degree apart a good eye sight in a clear night shows them separately; a small telescope shows that each of the two constituents is itself a double star. The Ring Nebula in Lyra is the largest and brightest example of this kind of nebulae. Narada is Egyptian Bes. Apollo made the tortoise shell lyre.

SAPTARSHI (Av. Haptoiringa : Shirozah 13) is the Ursa Major, containing seven bright asterisms, a very striking feature of the northern sky. Saptarshi (Ursa Major) is beyond Visvakarman (Hercules, x, 82,2). The Riksha (Bear = Ursa Major) set high in heaven that shines at night, where does it disappear at day (1,24,10)? Seven Rishis (Sat. Br. 2,1,2f) are regarded as seven stars in the Great Bear and are stated to have been originally bears. The seven conspicuous stars of the Great Bear (Dipper) are : (1) Alpha = Dubhe (Dhurve = Kratu); (2) Beta = Merak = Pulaha; (3) Gamma = Phecda = Pulasta; (4) Delta = Megrez = Angiras; (5) Epsilon = Alioth = Atri; (6) Zeta = Mizar = Vasishtha; (7) Eta = Alkaid = Marichi. Mizar having a double star is called Vasishtha and his spouse Arundhati. Some name Alcor as Arundhati. Egy. Seth Typhon, bringer of evils. Ursa Minor - Tuart = Hippopotamus.

SVENA (Av. Syena : Yast 4'1) is the Aquila, the flying eagle

or vulture with outstretched wings, the Hawk of the Egyptians. The Milky way is here divided into two branches. Several Novæ have appeared in this constellation, and Novæ III in 1911 attained a brightness only slightly inferior to Sirius. Its brilliant star Altair (Sraavanā) is at a distance of 16 light years and has the luminosity of 9.2 suns. Svena stole Soma (=amphora-Aquarius) in the heaven (4,27,3). Vulture was sacred animal of the Egyptian and Babylonians. The vulture with outstretched wings held in her beak or claws the Ankh of life. Garura (eagle) became the standard (Garura dvaja) of Vishnu. He also became divine messenger. In the Greek legend Zeus in the shape of an eagle (Aquila) carried off Aigina (amphora : Aquarius), that is, stole the prominence of Aquarius by its brilliant star Altair. The Amorite storm-bird Zu stole the tablets of heaven, that is, the Aquila with its brilliant star took the place of zodiacal Aquarius. Zu stole from Baal Tablets of Destiny which gave him power over the universe as a collector of the fates of all. Aquila was represented by the Roman eagle, the double-headed eagle of the Khatti (Hittite) and of the German and Russian Empires.

VISVARUPA is Scorpio. Visvarupa is three-headed and seven-rayed (*tri-sirshanam sapta-rasmim* : x, 8, 8) and six-eyed (x, 99,6). Three heads are the two nippers and the cephalo-thorax. Seven rays are the 4 pairs of walking legs. According to the Greek legend, Orion having boasted to Diana and Latona that he would kill every animal on earth, these goddesses sent scorpion which stung Orion, and Zeus raised the scorpion to the sky. Scorpio is a zodiacal constellation. In the heart of the Scorpio there is the bright star Antares (-rival of Mars-Jyesthā) at the distance of 380 light years and has the luminosity of 4000 suns. Of all the stars in the sky Antares appears the reddest, being followed by Betelgeux in Orion and Aldebaran in Taurus. These three stars are red giants, Antares having about 450 times the diameter of the sun, Betelgeux 300 times and Aldebaran 40 times. VASUS are represented by Delphinus (Danisthā). Vasus are numbered to be 8, giver of prosperity and abundance. The striking small constellation is situated between Cygnus and Aquila, not far from Altair; of six asterisms of Delphinus 2

are prominent; two appear dimmer. Gemma Delphini is a double star. Yellowish component being magnitude 4, and the bluish component of 5th magnitude.

INDRA (Av. Andra; *Verethragna* = Vritrahan : Khatti-Mitanni *Indar*) is Centaurus. Indra (Centaurus) with his thunderbolt is transfixing the boar (Varaha = *Lupus*) (1,61,6-7). Centaurus is a southern constellation (invisible at present in northern Europe) with representation of a human being in front with the body and hind legs of a horse attached to the back, rich in bright stars and globular clusters. Alpha Centauri is the third brightest star in the sky and is found to be our nearest neighbour. The distance is 4.31 light years. It is a yellow star and has the luminosity of 1.3 suns. But being situated within 30° of the South Pole it is not visible in northern latitude. Beta Centauri lies within 5° of it. Such a juxtaposition of two first magnitude stars is not found elsewhere in the sky. Beta Centauri is at the distance of 300 light years and has the luminosity of 3000 suns. Our nearest star is Proxima Centauri. Though it is nearest to us, it is 25,000,000 miles and 270,000 times as distant as the sun, that is 4.27 light years, yet it is so faint that it has only the luminosity of 1/10000 of our sun. Omega Centauri is the first example of a globular star cluster; it is possibly the nearest object of this class, but the distance is no less than 20,000 light years. Photographs of it show more than 6000 stars within a circle of 20 feet diameter, but the actual number of stars must be much greater. Centaurus (Indra) is in ascendancy from April to June and then inclines towards the southwest and becomes invisible in August. In northern latitude it is not at all visible. But about 4000 years ago, when the Pole was at Thuban, about 17° further south, upper parts of Centaurus were visible from the latitude of Greece. In the Vedic age Indra became supreme because the ascendancy of Centaurus coincided with the Rainy Season (S. W. Monsoon), very important for an agricultural people. It is the season of thunder and lightning. So he became the irresistible god of war. Indra represented the sky from vernal equinox to summer solstice in the ascendancy of Centaurus. Later up to autumnal equinox he remained the companion of Varuna. Indra in the summer solstice is held aloft like a pole (1,10,1).

Indra is called Māghaban, for he enters into Magha (Regulus in Leo) during summer solstice and thus becomes the slayer of Vritra (Hydra which then becomes invisible : x, 23,2). Virgo is just above the head of Centaurus, Indrāni, the queen of Heaven. Indra absorbed many qualities of Dyaus as a thunder god and practically subordinated him in the pantheon, as Thunre (Thor=Tyr), the Teutonic god, took the place of Zeus. Both Indra and Thunre (Thor) are storm, rain and thunder gods; they are equally irresistible warriors, insatiable gluttons, drunkards and profligates. Lith. Perkuna is also a god of thunder and lightning. Indra=shining √stan—to thunder. Skt. stanita=thundering, Gk. sten-ein, Lith. stenate—to groan. Lat. ton-are=to thunder. Thunar=Thor, Tyr=thunder, Tuesday.

VRITRA (Av. *Verethra* Gk. orthros) is Hydra, —the water snake—lying north of Centaurus and Argo and south of Virgo and Leo. It contains one star of second magnitude, and about 400 stars are visible to the naked eye. At Arslan Tepe a Khatti basrelief shows a bearded Khatti god with dagger and club is combating a many headed serpent, coiled in the water. The serpent's open mouths and fangs are thirsting to strike. ULUKA is Corvus—the owl (or raven) on the body of Hydra below Virgo. Uluka is the messenger of death (x, 165,4). Parsis expose their dead to be devoured by vultures, owls and ravens. The Hindus still make the ravens eat the offerings made by them to their ancestors. Corvus has configuration of a raven with 4 stars of second and third magnitudes.

PRAJAPATI is the Orion. There is a story (A. B. 8, 38) that Prajapati being enamoured of his daughter Ushā (Eos) followed her. Usā changed herself into a female deer Rohini (Taurus). At this Rudra (Sagittarius) being incensed at the father copulating with his own daughter (X, 61, 6) aimed his arrows at him. The Belt or Girdle of Orion contains a number of bright stars in straight line to Orion and Taurus. Taurus is called deer, for deer and bull resemble each other. Sat. Br. (2, 1, 28) says that Mrigasira (G. Orionis—Bellatrix) lies in the head of Prajapati (Orion). In Gk. mythology Artemis (Sagittarius), a huntress, armed with bow, quiver and arrows, aimed her arrows at Orion, a handsome hunter as he attempted to rape Eos—the dawn.

maiden—and changed Eos into a deer, because she was bathing naked. In Babylonia Orion is *Tammuz* and in Egypt *Unas*. Orion is one of the most conspicuous constellations, in configuration of a gaint with a sword in right uplifted hand, shield in left hand, a belt in his waist and left foot raised, containing many bright stars. Betelgeux (the arm-pit) is the brightest star of Orion and twelfth brightest in the sky. Because it shines with a deep red light, camera exhibits it fainter than the three stars in the Belt of the Orion. Betelgeux (Adra) is 25 million times as big as our Sun, and 300 times its diameter, but containing only 40 times its substance. Betelgeux is at a distance of 200 light years and has the luminosity 1200 suns. A little to the right of the Belt of Orion and below it is the first magnitude star Beta Orionis (Regel = Vana Rajan), the seventh brightest star in the heaven, at distance of 500 light years and has the luminosity of 15000 suns. Exactly below the middle star of the Belt of Orion is the Swordhandle which contains the great nebula of Orion which can be seen with naked eye. The multiple star Theta Orionis (Mintaka) is near the centre of the nebula. It seems that the principal stars of the constellation form a single system and are involved in the nebulosity whose luminescence is stimulated by intense radiation of light of short wave lengths.

BRISHAVA (1, 116, 18; Mriga: X, 86, 2); Avestan *Geush*: By 7) is Taurus—The Nandi (Bab Ninup) Bull of Siva (Ophiuchus), Appis Bull of Osiris and Golden Calf (Ex. 32) of the Bible. The Greeks fabled this constellation to be the Bull which bore Europa across the seas to Crete and was afterwards raised to the heaven by Zeus. Aldebaran is the principal object in the Hyades. Taurus represents the forward part of the bull. Sakaduma appears to be the Pleiades (Kritika), the leader of the hosts in the speckled (ruddy) Taurus (1, 164, 43; Av. 7, 128, 1-4). Alpha Taurus (Aldebaran) is at the distance of 57 light years and has the luminosity of 90 suns. Because Aldebaran is a reddish star of first magnitude, it is called *Rohini* (reddish). Ganesa is Aldebaran, is vermillion hued. Aldebaran is in eyes of Taurus, and the head of the Taurus seen upside down, the head of the Taurus was regarded as the head of an elephant and the two horns are the two tusks of the elephant.

Because of the prominence of Aldebaran (Rohini), *Ganesa* is the wisest and scribe of the gods (Baby. *Nebu*), and is entitled to the first offering in the beginning of every worship. Janus was worshipped by the Etruscans and Romans as the deity who presided over everything. From Janus, January, the first month of the year, was named. Pleiades form a striking group, even to the unaided eye, of physically connected stars all moving through space together with the same speed and in the same direction like a flock of wild goose. For this reason Pleiades (Sakaduma : 1, 164, 4+ ; Av. 6, 128, 1) represents, *Kartikēya*, and at the junction of *Kirtika* (Pleiades) with the full moon, Kartika as a commander of a divine army, (*deva sanā*) is worshipped. Baby. Ninip (Nandi) was a bull connected with phallic stone worship. There were winged (Aquila) bulls with human heads. Cretan Minotaur had the human body with bulls head. PUSHAN (Gk. Pan-Lat. Faunus) is Auriga. Pushan appears early in the morning with Vāyu (Arcturus, 7, 39, 2) and disappears with sunbeams and lustre of *Savitar* (X, 139, 1). Pushan's golden ship (Argo) floats in the heavenly ocean (Milky Way) on an embassy to Surya (6, 58, 3). Pushan in his right hand (6, 54, 10) holds a goad (*ashtra* : Av. *astra* (6, 5-8, 2). Pushan, as charioteer, guides through firmament the golden wheel of hero's car (6, 56, 3). Auriga=charioteer (Gk. *auros*=swift+ager—to drive=swift driver). He is provided with a goat (*aja* : 1, 162, 2-3). His car is driven by goats (1, 38, 4). Pushan is the protector (*pasupa*) of cattle (6, 58, 2). Pushan arranged the marriage of *Asvins* (Pegasus and Equuleus) that rise early in the morning before sunrise with *Suryā* (the dawn maiden=the rays of the Sun : X, 85, 14). The Greeks conceived Auriga constellation with the configuration of a man in a more or less in a sitting posture with a she goat and kids in his left hand and a bridle in his right. Capella its bright star means she-goat, while the *Haedi*=kids. Capella (Brahma Hridaya) is the fifth brightest star in heaven. It is a binary star at a distance of 52 light years. Its two components emit respectively 105 and 80 times the light of the Sun, revolving round one another in 104 days. Both are yellow giants. The larger star has about eleven times the diameter, thus about 1300 times its

volume, yet only weighs $4\frac{1}{2}$ times as much as the sun. The junior partner has half the diameter of the senior and about $\frac{2}{3}$ of its weight. Beta Aurga (Menkalinan) is also a binary, larger than the sun, revolving round one another in less than 4 days, thus eclipsing one another in so doing and the light of the star shows temporary dimming. But its components are of equal brightness and have the brightness of 50 suns and situated at a distance of 100 light years. Baby. Enkindu (Eabani) has the legs and hoops of goats like Pan. KAMA-RATI is the Gemini, Hindu Ardha Narisvara=Gk. Dionysos androgyne, Eros androgyne, Herm-aphrodotos, Egypt. Neith). It is the Hindu Hara-Parvati, Isa-Isani in eternal copulation, the Egypt. wind god Shu in sexual congress with his consort Tefnut, Syrian Baal (Bhola-nathā, Balesvara) and Astarte=Isvari, Belit—the lady), Gk. Dioscuri (Castor and Pollux; Pedarasty was very popular and fashionable among the Greeks), Pelasgian Dionysus and Bacchante, Roman Liber and Libera. Gemini is a zodiacal constellation lying east of Taurus on the other side of Milky Way. It represents two youths Castor and Pollux sitting side by side. In the heads of twins respectively are situated the two bright stars which go by their names—Castor to the West, a greenish star intermediate between the first and second magnitudes, and Pollux to the east, a full yellow star of first magnitude. Castor is a peculiar binary star. One component is about half as bright as the other, having the luminosity of 28 and 11 suns, at the distance of 43 light years. Their combined weight is $5\frac{1}{2}$ times of our sun and revolve round one another in 306 years. But they have a faint red companion Alpha Geminorum C which only gives $\frac{1}{3}$ part of the sun light and is invisible to the naked eye. Again each of these 3 partners are spectroscopic binaries. They cannot be detected by telescopic observations. But spectroscopic examination shows that each star consists of two partners moving at different speeds. The periods of the revolution of these spectroscopic binaries are 9.22 days for the brightest star; 2.93 for the second brightest and 20 hours for the Alpha Geminorum C. So Castor is a colony of 6 stars. Pollux (Punarvasu) is the fifteenth brightest star of the sky at the distance of 32 light years and has the luminosity of 28 suns. Zeta

Geminorum is a Cepheid Variable in a period of 10. 15 days. Kāma=love. $\sqrt{\text{kam}}$ =to desire, love Skt. Kamaniya=Kāmya=desirable; Kamra=charming; Cāru=pleasant. Lat. carus=dear; (c) amare—to love; amors—to love. Rati=delight, sexual pleasure. $\sqrt{\text{Ra}}$ =to be delighted. Skt. rama=to be delighted; ramana=delight, copulation. Gk. eros=love. Lith. ramas=rest; rimti—to be quiet. Approdite=abhra-diti=splendour of the sky. In later Buddha and Jaina iconography Kāma was represented as Yaksha Kuvera, and Rati as Yakshi, goddess of love, joy, fortune and wisdom, resembling Gk. Aphrodite, Av. Masha and Mashyāna, Bib. Adam and Eve.

MATSYA (x, 68,8: Av. *Karo Masyo* B. Y. 26) is Pisces. In *Bahran Yast* (*Verethragna*=killer of Vrithra=true genius of victory) there are 19 celestial bodies—shining and bright, including Karo Masya, Pisces in a zodiacal constellation (Baby. Ea; Gk. Poseidon) represented by two fishes tied together by their tails. In Gk. legend Aphrodite and Eros while on the banks of the Euphrates were surprised by Typhon, and sought safety by jumping into the water where they were changed into fishes. *Piscis Australis* is the Southern Fish. Fomalhaut (Mouth of the Fish: *Piscis Australis*) is the twenty third brightest star in the sky at the distance of 24 light years and has the luminosity of 13.5 suns. Babylonian Ea is identified with Oanes by Berosus by a Babylonian priest of Baal Marduk in third century B. C.; “a creature endowed with reason with a body like that of fish, with feet below like that of a man with a fish’s tail”. Ea in Gilgamesh (Hammurabi) Epic befriended Pir-Napishtim (Av. Yima) and advised him to build a vessel so as to be prepared for the approaching deluge. A fish prophesied a flood and asked Manu to build a ship which it piloted to. Naubandhana. Atargatis, known to the Greeks by a shortened form of the name as Derketo, was a Syrian Great Mother fish-goddess. Remi was the Egyptian fish-god and Sebek a crocodile god. Baby. trinity is preserver Ea—Vishnu (fish—Matsya is regarded as its incarnation); destroyer Enlil (Anila as a storm god: a name of Rudra Siva); and creator Anu—Brahma; Anu is also a name of Brahma and Vishnu. The upper part of Phoenician Derketo was that of a pretty seductive maiden, but the part which extended from thighs to

feet terminated with the tail of a fish. Dagon, the Philistine god was half-fish and half-man, the consort of Derketo. Dagon became the Philistine and Phoenician corn god before whom 'golden mice representing your mice that mar the land' was offered. It is the Poseidon—the Roman Neptune—who being the god of the ocean and storms carried lightning trident or three-pronged fish-spear to pierce fish. Poseidon holds a fish in his right hand (N. I. D.). It is likely that Matsya (Pisces) worship originated with the Mediterraneans. The Egyptian ithyphallic god was Min. After the annual Nile inundation a thick sedimentary layer of mud is deposited in the delta from which myriads of shrew mice appear, which are soon converted into waving green cornfield and rich golden harvests. Thus shrew mouse was regarded by the ancient Egyptians as the harbinger of agricultural prosperity; sacred at Buto, Athribis. Mouse is also the sacred emblem of Ganesa (Roman Janus).

MANDUKA is Cancer (Crab). This constellation was known in Babylonia as a Turtle (*Pulukku*), Egyp. Beetle, and in this country for Kurma which is a representative of Vishnu like Matsya. Vishnu in the beginning was the sun, later the zodiacal constellations, and finally all the constellations as cosmos (Sisumāra : *Matsya* P. 5, 23). *Advaryus* (planets) shine throughout twelve monthly orders (ritum = Lat. artus) but Manduka (Cancer) is hidden in the rains (monsoon commences with the Cancer : 7, 103, 8-9). Cancer (1 Skt. Karkata - Gk. Karkinos = Lat. Cancer = a crab) is a zodiacal constellation but without brilliant stars. There is a hazy looking spot between Leo and Gemini known as Praesepe (Beehive), a curious star-cluster.

AJAEKAPĀD is the one-footed goat—Capricornus. Ahi Budhnya, thunder and firmament are closely linked (x, 66, 11). Ajaekapād rises in the east (*Tait. Br.* 3, 1, 2, 8). Capricornus is an ancient zodiacal constellation of winter solstice. It is represented in Babylonian monuments having the fore-part like a goat and the hind part like a fish. It was conceived by the ancient Egyptian as a crocodile (Sebek). And the Hindus call it now *Makara* (crocodile) instead of Aja Ekāpad. Goat-fish emblem has been found on the Kassite boundary stone. Aryaman is Cepheus. Aryaman was like a comrade (aryamyam : 5, 85, 7). Aryaman is a *desired friend* (*Yasna*, 4,

1, 2), brings joys and happiness and removes sickness and diseases (*Farg.* 22, 23). Aryaman is a husband finder (Av. 14, 1, 17) and is associated with marriage (\times , 85, 231; Av. 14, 1, 2). Aryaman represents the spring—the season of flowers, balmy air, love and marriage. As spring is the king of seasons, or as bridegroom's best man, Cepheus has the configuration of a king bearing tiara on his head, a sceptre rod in his hands. Aryaman is fat-bellied Egypt. Dwarf Bes, chasing away Capricornus (winter). Later in Hindu iconography it became Yaksha trampling upon winter, a pleasant—jolly follow. Delta Cephei repeats the changes from brightness to dimness and again flaring up to former brightness regularly in $5\frac{1}{2}$ days. Other stars showing same periodic fluctuations are known as Cepheid Variables. It is suggestive that Armenia might have been originally settled by a clan under the name of Aryaman. Darius in his inscriptions (521—486 B. C.) called the country Armaniya. But it is Assyrian Urartu, Babylonian Suvartu, Hebrue Ararat, the native Biaana—the modern Van. MARUTS are visible as light (1, 64, 9) and they shine brightly (1, 64, 2). They dwell as luminaries in heaven in sky vault's luminous sphere (1, 19, 6). They remain in the firmament (5, 87, 9). They are red-coloured (*aruna*), wander over the sky (8, 7, 7). Maruts travel in the heaven (5, 5, 7; 5, 60, 6). "You gleam in the midst of stars as if decorated with rings. You shine with cloud born lightnings as the torrents of rain fall. Rudra, the bull, has given you birth, O brilliant breasted Maruts, in radiant laps of cloudy sky (2, 34, 2). Marut is planet Mars, the Roman god of war (called Marti, Martis: Gk. Ares; Amorite Marduk, ancient form Martu, Marutukku = Kassite Maruttas: 14. E. B. *Marduk*). Vedic sardha maruta (the troop of the Maruts) is the Umbrian serpo Martio. To the naked eye Mars appears of a bright of a decidedly reddish or lurid tint which contrasts strongly with the whiteness of Venus and Jupiter. At opposition it is brighter than a first magnitude star, sometimes even outshining Sirius. Because it is a planet it was called a *Wanderer* over the sky. Mars is one of the few heavenly bodies on which we see a solid surface like the earth. Its solidity is shown by the substantial permanency of its configurations. But Mars has very little atmosphere to retain the solar heat.

And its reflected light indicates that its surface may be covered with volcanic ash which again has very little power to retain heat. So after sunset the equatorial region even becomes very cold. Yet seasonal changes are observed on Mars. During the planet's winter a white snow cap undoubtedly forms on the north-pole. And in summer as the snow cap melts sub-polar regions change their appearance. Mars is much smaller than the Earth, its diameter being only a little more than half of the diameter of the Earth. The equatorial diameter of Mars is 6740 Km (4190 miles). The time of revolution of Mars is 686.98 days. Mars has two satellites—Deimos and Phobos.

BRIHASPATI is the planet Jupiter. "Fathers have decorated the heaven with constellations as a dark horse is adorned with pearls. They have made night dark and have let light in day. Brihaspati cleaves the rock and has found the cattle (shines piercing through the clouds : x, 68, 11). Brihaspati is bright (1, 190, 1) like a meteor (ulkam : x, 68, 4). Brihaspati, blue-backed, shines brightly golden ruddy coloured light (5, 43, 12) which is actually the case with Jupiter. Stars (rocanā) are firm and immovable (*sthirāni*) in the heaven (8, 14, 9). But the seven *vipras* (the five planets then known; sun and the moon) are flying in the fixed courses, the five Adhvaryus (planets) well protected towards the east regularly—the immortal Ukshas (planets) to the satisfaction of heavenly luminaries (3, 7, 7). As Jupiter is the largest planet, he was called the leader of the luminaries (devaguru). Egyptians called Jupiter Upesh=resplendent star. The Babylonians associated it with Marduk. Jupiter requires 11.86 years to complete a sidereal revolution. The planet's surface not infrequently displays striking colours. In particular the two belts north and south of equator are sometimes very red whereas at other times, they may be brown, neutral grey, even bluish. One belt exhibits a periodic variation in such a manner that when it attains a maximum of redness, the other is bluish. And between the periods of extreme coloration both belts are moderately red. The cycle of changes was found to take place in 12.08 years which is in close agreement with the planet's revolution. Of all planetary markings none has received so much attention as Jupiter's great red spot. Jupiter has 9 satellites (14. E. B. Jupiter). Jupiter

has nearly eleven times the Earth's diameter and 317 times its weight. It has more than double the weight of all the other eight planets combined. As Jupiter is in the middle of the planets, fifth out of nine, it must have evolved out of the central part of cigar-shaped gaseous filament which ejected out by gravitational pull when a bigger star passed by our sun. The central part was the richest in matter. That is the reason why Jupiter is so large and heavy. And at the ends of the cigar-shaped filament Mercury and Pluto are smallest. The temperature of Jupiter would be about 270° below zero. This will reduce our atmospheric gases into liquid air. The clouds of Jupiter are clouds of carbon dioxide. Jupiter consists of 44,000 miles solid central core, surrounded by a 16000 miles thick layer of ammonia-ice and 600" miles deep cloud-laden atmosphere. Jupiter's mysterious great red spot is an impression of whirling gaseous elements escaping from the depth of Jupiter's dense atmosphere and soaring above its cloud surface from an 30,000 miles long and 7000 miles broad dent by a striking comet which penetrated into its deeper layer. *VENA* (*Vanant Yast*; *Usanas Sukra*) is the planet Venus. "With the wings of gold the messenger of Varuna, the bird (*Vena*) flies to the region of Yama (*Perseus*: x, 123, 6). The *Vena* is a swift mover (x, 123, 8) and wanders in high place (x, 123, 7). The Venus shines with a dazzling lustre. Its greatest brightness is attained at about 36 days on either side of inferior conjunction, its elongation from the sun then being 39° and its phase to that of a 5 days old moon. When seen in the western sky in the evenings at its eastern elongation, it was called by the Greeks *Hesperus* and when visible in the morning in its western elongation it was called *Phosphorus*. Venus completes its revolution in 225 days. The atmosphere of Venus is heavily cloud-laden. If there were living beings in Venus and Jupiter, they could not see the beautiful star-spangled sky piercing through their surrounding atmospheres. Venus and Earth are of about the same size. Oxygen which forms a large proportion of our atmosphere is very rare in Venus. Plant life is a regular oxygen factory. Oxygen on the Venus has been combined with iron or other substances and there is no plant life in Venus. Venus looks largest and brightest when

it is at its nearest, between us and the sun. Then it looks like a new moon crescent. All the rest of the face it turns towards us in darkness. When it is furthest from us, behind the sun, it is nearly six times distant and looks proportionally small. But as the sunlight falls on the whole of the face of the Venus it turns towards us, it looks globular. Vena with his golden pinions is friendly to amorous delights and to lovers (x, 123, 51. Venus was often associated in Semitic Mythology with Al-lat or Al-Ouzza, the polyandrous and polygynous consort of Al-Azor, Athtar, Baby. Ishtar; and Jupiter with Marduk. Skt. Van=to desire, to cherish, to win. Swed. Vinn=the Roman Venus is the planet as well as the goddess of love. SUPARNA (x, 86, 19; 1, 105, 11) is Mercury. Mercury (*Mangala*) is frequently dimmed or obscured by the haze and mists near horizon. But at a favourable elongation it can reach 1.2 magnitude brilliance. Its period of revolution in its orbit is 88 days. Mercury has no satellite. It is about $\frac{1}{17}$ in weight of the Earth. Sixteen Mercuries rolled into one would barely make our Earth. It has the size of the moon. Mercury presents the same face to the sun, being held by its gravitational grip, as the moon presents the same face to the Earth. So the side perpetually baked by the fierce sun has lost its water, atmosphere; and if there be any river it is of molten lead. The other side is severely cold as the surface consists of volcanic ash which is unable to store any heat. As it quickly moves round the sun, Suparna was called the bird of *Vishnu* (sun) and Mercury was called the messenger of gods. When Mercury is between the Earth and the sun, the light of the sun falls only on the side away from us; we see only a dark ball across the bright solar disc. When Mercury is in other positions the part we see illuminated may range from a thin crescent like the wing of a bird to almost a full circle when the planet is on the other side of the sun. Greek *Hermes*, the messenger of the gods, and Baby. Nebo, the scribe of the gods, represented Mercury. SAKUNA (9, 86, 11) with his golden wings, the envoy of Varuna, hastens to the region of Yama (Perseus: x, 123, 6). Sakuna (now called Sani) is Saturn. According to the Hindus Yama is the guardian of Sani and Sakuna (vulture) is inauspicious. To the naked eye

Saturn when in opposition always appears as a star brighter than the first magnitude, but in consequence of the changing phases of its rings it varies greatly in brightness. The planet shines with a warm yellowish light like that of Arcturus. The Saturn is the sixth major planet in order of distance from the sun. Its mean distance from the sun is 885,900,00 miles and and its periodic time is $29\frac{1}{2}$ years. The volume of Saturn is about 750 times that of the Earth, but the periodic times of its satellites indicate that it exceeds the Earth only about 95 times in mass. Its mean density therefore is but 0.13 of that of the earth or over 0.7 times that of water. The most remarkable feature of Saturn is the magnificent system of rings by which it is surrounded. The plane of the ring is inclined about 27° to the planet's orbit and about 28° to the ecliptic and keeps parallel to itself throughout the planet's revolution. There are accordingly two opposite portions of the orbit near longitudes 172° and 352° , where Saturn is the Leo and Aquarius respectively at which the ring can be presented edgewise to the Earth and when this event happens (as it does either once or three times during each passage of the ring plane across the Earth's orbit), the ring, owing to its thinness disappears from view even from powerful telescopes. At intermediate positions when Saturn is in Taurus, Gemini and Sagittarius, it appears opened out at an angle of 27° , it shines almost with treble brilliance. Saturn has 9 satellites and is surrounded by three flat circular rings which form a kind of collar round its middle. This ring has been formed out of tiny fragments of a large satellite that came too near to the danger zone of gravitational pull of Saturn and was torn into pieces. Babylonians coloured seven planets as follows: (1) the sun—golden; (2) the moon—silver; (3) Mercury—blue; (4) Venus—yellow; Mars—red; (5) Jupiter—orange; (6) Saturn—black which is of Kali yuga. Babylonians decorated their temples in seven colours after the seven planets. ULKA (4.4, 2) is the Meteor or shooting star. Between Mars and Jupiter there is an abnormally wide gap, but there are thousands of asteroids which are but fragments of a planet which once filled the gap but coming within the danger zone of Jupiter broke into pieces. However they are moving round the sun as their

parent planet did. Trails of comets coming within solar gravitational pull gets dislodged from their parental body and form meteoric stones. Occasionally the Earth passes through the zone of these fragments and some of the meteors get entangled in the earth's gravitational pulls. They are usually raised to a white heat by the friction of air and they are vaporized naturally many miles above ground and we have a fine meteoric display—a shower of shooting stars. Sometimes they may be too big to be completely vaporized and they fall into the earth many of which in the past have been made into deities. The meteorite owing to the resistance to the air becomes incandescent and is then seen as a scintillating ball of fire, sometimes with an apparent diameter greater than that of the moon, leaving behind it a trail of luminous matter. As a consequence partly of shattering and of explosion due to the rise of temperature by the friction generated by its rapid movements in the air, a short time after the disappearance of the fireball loud detonations like thunder are heard. The meteorite is usually an irregular roughly pointed conical stone with a thin dull black crust and curious pittings containing varying amounts of metallic iron and nickel. The meteorite stone was worshipped in ancient times as it is now kept as a valuable possession in Museums. The image of Diana was a meteorite stone *which fell down from Jupiter*. The Kaaba of Mecca is another. The Phoenicians worshipped Astarte and other gods in the shape of conical meteorite stones (*baetyla*). Semitic Allat or Illah was represented by a square or triangular stone. Thus possibly linga stone as the image of Bāl (Bhōlānath) originated. In these temple priestesses (*qedeshim*) and priests (*qedeshoth*) played gods and goddesses and worshipped gods in the form of sexual unions, as they were fertility gods. Maidens sacrificed at the shrines of Astarte and Bāl their virginity in the belief that they thus propitiated the goddess and god of love and fertility (14 E. B. Phoenicia). Bāl whose worship was characterized by gross sensuality and licentiousness was represented by symbolic pillars with rounded tops (*linga*).

Tvashtri is Cassiopeia. Tvashtri is skilful handed and a deft worker (3, 54, 12). Tvashtri is the best artisan; he sharpens his iron axe (*parasum svāyasam*) to fashion bowls to

hold Amrita (x, 53, 9). Tvashtri means carpenter. ✓ Taksh—to cut, hew, fashion. Skt. Taksha, takshaka=carpenter; takshan=Gk. tekton=carpenter; toka=offspring, children; tokay=a new born child. Gk. tik-tein=to produce; tek-non=child; tech-ne=skill; tekton=carpenter. Lat. talus=a die; textere=to weave. Lith. tik-ras=fit; tikti=to suit. Thus Tvashtri being originally divine carpenter, he began to fashion everything. A carpenter was the most important and useful member before smithy was known. He fashioned chariots and bows on which the success of war depended. Thus he fashioned the thunderbolt of Indra (5, 31, 4), develops the germ in the womb and is the shaper of all forms (8, 91, 8). Cassiopeia holding in hands instruments in the attitude of a carpenter, is seated on a chair formed by its five principal stars.

Varāha is Lupus. Indra transfixes Varāha (boar: 1, 61, 7). Indra killed the ravenous boar (8, 66, 10). If one looks at the constellation figures (14: E. B. *Constellation*), he will find that Centaurus (Indra) is piercing the heart of the prostrate Lupus (the boar) and at the left of the *Lupus* is Scorpio (Visvarupa) and at the right of Centaurus is the monstrous water-snake Hydra (Vritra). The killing of Erymanthian boar is ascribed to Herakles in Hellenic myths.

Apah (Kassite *Apsu*, Gothic Ahva, Av. Avam) is zodiacal constellation Aquarius in the shape of a person standing, pouring out from an amphora (kumbha) a stream of water which flows into the mouth of the Southern Fish (Piscis Australis). The delightful goddess (*devi*) advances in the path of luminaries (*devānām*: 7, 47, 3). In whom Soma (the moon) is delighted, as a youth is charmed with a pleasant (*kalyāṇibhir*) buxom maiden, so thou approach Apo and purify her with fragrant herbs (x, 30, 5). As a maiden yields to the youth that comes to her with an ardent love in tryst, so all the *Advaryus* (planets) are in mutual rapport with the *Devi* (x, 30, 6). The sun (*surya*) enters into Apo (1, 23, 17; at present on Jan. 20). Water (Apo) that flows from heaven, that flows in dug out canals (*khanitrinā*), flowing from nature—bright, purifying and speeding towards the ocean, let that Apo protect me (7, 42, 2). Apah is Av. Apo, and its presiding deity is "Ardvi Sura Anahita in the shape of a maid, fair of

body, most strong, tall-formed, high-girded, wearing shoes up to the ankle, radiant, who made a part of the waters stand still and part of water flow, and born in stars (Aban Yast 78, 85). The goddess of springs and streams and of all fertility—Ardivisura Anahita, Anaitis—is endowed with the form of Baby. Ishtar and Belit. She is depicted as a beautiful and strong woman with the prominent breasts, a golden crown of stars and a golden raiment. She is worshipped as the goddess of generation and all sexual life (*Herod* 1, 131, where Mithra and Anaitis are interchanged) and religious prostitution is transferred to her service (*Strabo* 11, 532). In the temple of Anahita (Anaites=undefiled) in Bactria stood a famous cult image of her wearing a golden crown with eight rays and a hundred stars and clad in the fur of 30 beavers of the sheen of silver and gold. Anaitis with a thousand arms represented Oxus with a thousand canals (*Tarn*: Greeks in Bactria). As there are no stars more brilliant than of third magnitude in Aquarius, the neighbouring constellation Aquila, with its brilliant star Altair took the place of Aquarius for observational purposes. So it is said that Garura (Aquila) stole the *kumbha* (Aquarius) of ambrosia (amrita). In Teut. myth Odin in the form of eagle devoured the honey and stole the long jar from which honey fell on the Himmelsberg which produced poetic inspiration. Babylonian Zu stole Tablets of Destiny.

Trita is Bootes. Trita lives in the height of heaven (5, 9, 5). Trita Aptya urged on by Indra slew the foe (*Visvarupa*=Scorpio), seven rayed and three-headed, son of Tvashtra (5, 8, 8). Scorpio is situated between Centaurus and Bootes. In Avesta we find that Thraetaona (Trita), the hair (*viso-puthra* of Athway (Apta) clan, overcame Azi Dazaka (*ahi d ahaka*); Thrita (another name of Thraetaona) became the first healer, as it was thought that all diseases were due to poisoning by the biting of the snake (*Farg.* 20). Trita is also known as Aptya (of water 5, 41, 9-10=Gk. Triton). Greek Triton is a merman, as a human down to the waist but with the tail of a fish. He used to blow a trumpet of twisted conch shell to soothe the restless waves of the sea. Bootes means ox-driver from Gk. boyz=ox. It represents a man holding a crook and driving the bear (ox). Its brightest star is Arcturus

(Svāti=the presiding deity of Vāyu). Another interesting star is Delta Bootes, a beautiful double star composed of a yellow star of magnitude 3 and a blue star of $6\frac{1}{2}$. Trita is Teut. Thridi, Gk. Triton, Egyp. Ueret. Ekata is Gk. Hecate.

Gandharva is the Rainbow, Gk. Iris. Gandharva is the measurer of air's mid-space (x, 135, 5: Skt. madhya=Lat. medius=Gk. methos=Goth. midja=Russ. mejdu=O. H. Ger. mitti). Apsaras (Skt. ap, ambu, Goth. ahva, Lat. aqua=water. Skt. abhra, urmi (waves), Lat. imber, Gk. ombros=cloud), the lady, sweetly smiling supports her lover (Gandharva) in sublimest heaven. Erect to high heaven the Gandharva has been mounted, pointing at us his many coloured weapons (rainbows); clad in beautiful raiment, pretty to look at, for he as light produces pleasing forms (x, 123, 7). This multi-coloured weapon mounting in heaven is nothing but the Rainbow as an effect of the sun or moon shines reflecting on falling drizzles. The rainbow also may be observed when the sunshine falls on the spray of a waterfall. The Apsaras are the rain or waterdrops (√Drap=to run, flow. Gk. dropos=running, drapites=fugitive, Eng tramp. Ger. tropfen. Skt. dropsa=drop. Av. Drvāspā=water symph) on which the light falling causes rainbows. √Stri=to spread out. Skt. vi-stāra=spread. Gk. stor-namai=I spread out, Lat. ster-mer=to scatter; Lat. stramen=Lith. straja=As. streaw=Skt. trina=straw. Sk. tarā=Gk. ester=Lat. stella=Ger. stern=star. The rainbow consists of pure colours—red, orange, yellow, green, blue, violet and indigo—in the order of their wave lengths, the sunlight broken into their component parts by the spectroscopic effect of a multitude of drops of water. Later the Apsaras (Gk. Aphrodite=abhra-diti=the light of the sky) became water-nymphs—mermaids. The conception of the mermaid or siren perhaps originated from Dugony (Sirenia), mammals that have adopted aquatic life and known as sea-cow. Dugong holds its young to its breasts and suckles it. It is about 12 feet in length and weighs about 300 kilos. The Sakas conceived their original mother—Hindu Nāgini—as a charming maiden in the upper part above the waist, and lower part as a coil of a serpent. The Hindu Nāgini, upper part as an ever-youthful seductive buxom maid and the lower part in the coils of twin serpents,

lives in fountains and springs—fond of songs, dances and amorous sports. The Syrians conceived Atargartis, their goddess of love and fertility in the form of a pretty maiden in the upper part above waist and lower part in the form of fish.

RUDRA is Sagittarius. Rudra is the boar of the sky, reddish, gleaming (1, 114, 5). Rudra shines like gold (1, 48, 5). Rudra carries bow and arrows (dhanavāhan) and wears a variegated necklace (*niksham visvarupam* : 2, 33, 10). Rudra's bow is firm and strong with swiftly flying shafts (7, 49, 1). May that thunderbolt of thine, which sent from heaven traverses the earth, pass us by (7, 46, 3). Vākdevi (Virgo) fights for people and stretches the bow of Rudra (X. 125, 6). Rudra, O Tawny bull, slay us not. May we jubilantly debate with our heroes in the assembly (2, 33, 15). Sagittarius is in the shape of a centaur drawing a bow. The upper part is that of a man drawing a bow (Sagitta), the lower part that of a winged bull or horse. On account of its southern declination it is not visible in upper Europe. A very bright arm of the Milky Way passes through it; another part of the constellation is occupied by remarkable dark patches of Nebulae. It contains the Trifid nebula and the Omega, both fine examples of bright diffuse nebulae. Cepheid variables and globular clusters seem to congregate in this region, and it is probable that the extension of the galactic stellar system is greatest in this direction. In Baby. myths Nergal the archer was the god of war and pestilence. He was called the *furious one* (Skt. rudra). It is the Pelasgian Artemis. The arrows of Artemis not only brought death but also health and other blessings. Sagittarius was the war god of the Assyrians (Asura), and the all knowing lord (Abura Mazda=Asura Medasa) of the Zoroastrians. Rudra was the war god Adad (Adya and Adinātha, names of Rudra) of Amurru; Shugamuna (Skt. Sukāma—abundantly granting desires) of the Kassites; Sutekh of the Khatti; Tarku of the Phrygians; and Thor of the Teutons. Hittite Sutekh, Egyp. Set appear mounted on a bull wearing fringed and belted tunic with short sleeves, a conical helmet and upturned shoes; in one hand he grasps the lightning symbol—the flashing trident—and in the other a triangular bow resting on his right shoulder; an antelope

prances besides him. TRYAMBAKA is Ophiuchus (= Serpentarius; Asclepios). Tryambakam (three-faced three-mothered : ambhā, ambikā) = we adore, who is sweet-smelling (sugandhim) and augments (pushti-varadanam : 7, 59, 12). With humility adore the mighty Rudra, the ruler of men ; followed by the speedy ones, he comes from heaven, lord of himself, auspicious and (Siva) healing (X, 22, 9). Of all born thou art the greatest O Rudra, mightiest of the mighty, O thunder-wielder (vajra-vāho ; lightning fork = trident), transport us from troubles to welfare (svasti : 2, 33, 3). Ophiuchus (Gk. ophis = Vedic Ahi = serpent + echein = holder = Skt. Bhujangadhara) represents a man holding a serpent like Sagittarius (which it adjoins) it ; includes a region of the sky rich in globular clusters and diffuse nebulae. It is Gk. Asklepios (Lat. Aesculapius), the god of healing, whom Homer calls blameless physician. The chief seat of the worship of Aesculapius was Epidaurus where he had a temple surrounded with an extensive grove where serpents were kept and fed with honeyed cakes. Serpents were sacred to him for the god held serpents in his hands, and serpents were coiled round his club-like staff—thunder-rod. Consequently serpents became a symbol of renovation and were believed to have the power of discovering healing herbs. Hygeia, the daughter of Asklepios, fed a snake with milk and made the prognosis of patients who came to the temple to consult the oracles from the manner in which the snake fed on it. There were a large number of pretty youthful temple slaves (daughters of the god) whose duty it was to tempt the patients to sexual congress and if the man responded to the sexual appeal quickly with strong erection and copulated for a long while and felt gratified, the prognosis was favourable ; but if he remained apathetic with placid penis, the prognosis was bad. Rudra is the healer of all sickness (7, 64, 2). To Rudra the greatest poet (gāthāpatim) the highest intellectual (medhāpatim : asura medasa = Ahura Mazda. √ Madha = to mind, to understand. Skt. māti = mind, medhā = brain. Av. madh = to treat medically, mazda = knower. Lat. mens = mind. Lith. mintis = intelligence. Gk. mentis = wisdom ; menas = Skt. manas = mind. Russ. pamiate = memory), the most successful physician (Jātasa-

bheshajam), we pray for joy, health and strength (1, 23, 4). Therefore self-luminous Rudra is Siva (auspicious : X, 92, 9), Isāna- (lord) of this world (isānad asya bhuvanasya : 2, 33, 9) and an Asura (5, 42, 11). Su (excellent) asti (being existence). Svastika=Crux Ansata=The Tau cross with a handle=the symbol of blessing. √Su=to generate; Skt. Suta=son. *Su* therefore means *excellent*. √As=to breathe; Skt. asu=vital breath: asti=being; astitya=existence. Gk. esmi (Skt. asmi.)=I am. Lat (a) s-um=I am, Svasti=welfare. Skt. Sv-asti=Gk. au-esto; dāta vasunam=Gk. doteres eaon: Skt. ratam astu=Gk. ratum esto. Rudra thou art the great Asura (lord) of the heaven (*rudro asuro maho divas* 2, 1, 6). Rudra Triamvaka is a roarer-thunderer. The serpent in his hands (for which he is called in the Hindu Purānas Bhujanga-dhara) has been regarded by many ancients as thunderbolt. Ra=to bellow, roar. Skt. ras=to yell; rud=to cry, to wail; rudra-howler. Lat. la-trare=to bark; la-mentum=to lament. Ger. rohren Lith. reju=I scold; Russ. la-iate=to scold. Khatti war god Teshub (Kesaba) with his thunder club was possibly Ophiuchus. Kesaba is generally the name of Hercules (Krishna) in the Puranas. Kesaba means one with long hair. But Rudra is also a Kapardin whose hair is knotted on the top (1, 114, 1). Dhanvantari (holder of Dhanus=Sagitta=Sagittarius) was a great healer and expounder of Hindu Medical Science. Egy. Bes, healer and destroyer of serpents by strangling. VISVAKARMAN is Hercules. Visvakarman (the All maker) is the architect of the universe (X, 81, 2) who producing the earth and the heaven welded them together (X, 81, 3). What was the wood, and what was the tree from which they have cut out heaven and earth (X, 81, 7)? What was the stand on which he rested, which was it and how (supported) from whence Visvakarman (All-maker), the all-seeing created the earth and spread out the sky by his might (X, 81, 2)? Visvakarman is great in mind and power; maker (*dhata*), disposer (*vidhātā*) and the higher observer (X, 82, 2). He is our father, creator (*janita* (generator)), provider and knower of all races (X, 82, 3). Hercules is an ancient northern constellation, representing a giant upon his left knee, right knee bent, the foot placed upon,

the head of Draco (Purānic Kaliya Naga), a club in his up-lifted left hand and something in his right (the Greeks called it olive branch, the Hindus a flute). The constellation contains one star of second magnitude, nine of the third and twelve of the fourth. It contains a famous globular star-cluster (*Messier 13*) which is the first example in the northern hemisphere. The sun's motion through space is directed towards a point in this constellation. Visvakarman is Yādava Krishna and Dorian Herakles. Both the Yādava (Yutea) and Dorians were Alpines. Yādava Vishnu and Dorian Apollo represent the sun. Krishna and Herakles represent the constellation Hercules. Herakles (Hercules) was pursued by Hera with her hatred after his birth. She sent serpents to kill him. But he strangled them to death. Herakles killed Hydra (Vritra) in the waters of Lerna lake; Herakles killed Erymanthian boar, which heroic acts are ascribed to Indra in Vedic myths (8, 66, 10). Putanā conspired to kill Krishna since his birth; but she was killed. Krishna vanquished Kāliya Nāga in Kālindi. Draco is under the feet of Hercules, and there is Serpens near the left arm of Hercules. Before 2000 B.C. Draco (Manasā) was prominent with Thumban (Drubha) as the polar star, but due to the precession of the polar ecliptic Draco has lost its domination, and Hercules has taken its place on the right side of Hercules. Milky Way has bifurcated here. Krishna is said to have beaten Kāliya Nāga in Kālindi, and became Govid, or Gobinda—the finder of the cow. Cows are the Ursa Major and Ursa Minor which though now called Bears might as well as be taken as bovine animals. Hercules became Khatti Teshub (Skt. Kesaba), their war god with his mighty club. Among the Hindus like the Khatti Teshub and Indra myths, Indra and Krishna legends have been mixed up. Teshub with mace on his shoulder was also a war god of the Mitannis. Wife of Teshub was Shanshkash (Skt. Saukhyadā = causing welfare). Shaushika of Nineveh.

Parjanya is Rain. Parjanya is thine udder O cow (vasā - Aditi); the lightnings are thy teats, O cow (Aditi : Av. x, 1, 7). Parjanya is father, earth (bhumi Av. bumīn) is mother (Av. 12, 1, 12). Like a charioteer whipping his horses, he rushes the rain messenger for wars. Far off resound the roars of

lions when Parjanya fills the sky with rain clouds (5, 83, 3). Wind (*vātā*) blows furiously. Down come the lightning flashes (*vidyuta*). Plants shoot up as showers fall down. Food grows abundantly for all creatures as Parjanya inseminates Prithivi (*Parjanyaḥ Prithivīm retasāvati* : 5, 83, 4 : *Reta*=semen √ *Ri*=to flow Skt. *riti*=flow, custom; *retodhas*=impregnating; *retaja*=born of ones own semen: beloved son. Lat. *ri-uus*=flow; *liqu-ere*=to be liquid). Thunder and roar; cause impregnation (*garbham ādhā* 5, 83, 7). Parjanya like Dyaus impregnates the earth. Rain is his semen. Parjanya has also lightning and thunder like Dyaus. Parjanya and Dyaus are amalgamated in their characteristics. Parjanya is Lith. *Perknuas*, Slav. *Perun*, Teut. *Fjorgynn*, Icel. *Fiorgyn*, and Goth. *Fairguni*. *Perkunas* is the god of thunder, lightning and rains. The Letts still sacrifice usually lambs, and sometimes bulls to *Perkunas*. The White Russians describe *Perun* as a tall old man with large shoulders, black eyes and hair, but with golden beard, having bows in his hands whose arrows are the lightning flashes. The movement of his celestial car makes the thundering noise in the heaven (thunder). *Fjorgynn* is also god of lightning, thunder and storms. √ *Par*=to produce. Skt. *Parjanya*=producer of rain; *purodāsa*=share, Gk. *pareim*, *porsynein*, Lat. *parene*=to prepare.

Svarga is Heaven. Thy sons shall make offerings to gods, and thou shalt rejoice in heaven (*svarga* : ×, 95, 18; √ *svar*=to shine; heaven. Skt. *svarga*=heaven: *sur-ya*=the sun. Gk. *seir-ios*=*Sirius*=Dog-star; *sel-as*=splendour; *Selene*=moon. Lat. *ser-enus*=bright; *sol*=sun. Russ. *Svarog*=heaven). Fathers (*Pitribhi*) go to the region of *Yama* in the highest sky (*parame vyoman*) and get a dwelling and a bright body according to their acts (×, 14, 8). The burnt and the unburnt (dead bodies) carouse in the midst of heaven with pretty damsels (*svadhyā*). Give them O Lord their dwellings and their body shapes according to their inclinations (×, 15, 15). Send her (the wife burnt on the pyre with her dead husband becomes a *Svadhā*) also to the father so that he can move with the *Svadhā*, and wearing new life, let him increase his offspring, let him produce new bodies, O All-knower (*Jātavedha*=wise from birth : ×, 16, 5). Their penis is not burnt by *Jātavedha*;

in the heavenly world (*svarga loka*) they enjoy many women (*vahni strainamesham* : Av. 4, 34, 2). The bulb bearing lotus (*kumuda*) grows in roots, stem and flowerbuds. Let this water offering reach thee in the heaven like honey—a complete lotus pond. These Ghee, honey, alcoholic drink (*suro-daka*), milk, butter milk reach thee like a complete lotus pond (Av. 4, 34, 5). The *Asvattha* (*Ficus religiosa*) is the abode (*sandana*) of the gods in the third heaven (Av. 5, 4, 3). On a tree with fine leaves (*vrikshe supalāse*) Yama drinks with gods (Osiris is found on a celestial tree, the lunar markings). There our patriarch (*Vispati*) look after our ancient fathers (*purāna pitā* = ancestors : x, 135, 1). Lotus (*Nelumbo nucifera* : Skt. *Kamala*; *padma*) is sacred to the Hindus. It was sacred to the Egyptians. It was to them the emblem of fertility and they used to decorate the heads of Isis and Osiris with the flowers of lotus. The seeds of the lotus have been used as food in Egypt from remote antiquity. The Hindus offer lotus seeds in their *Yajnas* and use it as food in Kashmir, whence even the root-bulb and the stem are cut into pieces and used in meat broth. The seeds are like acorns in size and shape and their taste is more delicate than that of almonds. They can be roasted and powdered and eaten with great relish. The seed was called the *Bean* of Pythagoras and *Lien-hoa* of the Chinese. *Zizyphus* lotus is the North African plum tree like the Indian *Zizyphus Jujuba*. The fruit of *Zizyphus* lotus like the *Zizyphus Jujuba* (black plums) can be dried, powdered and made into bread. A fermented drink was also made from the plums (*Zizyphus lotus*) in Carthage. These people were called by the Greeks *loto-phagi*—the lotus eaters. For this reason lotus was called a tree whose fruit was the stable food and drink of the people. "Where there is eternal light and heaven (*svara*) is, in that ambrosial region, place me there, O Pavamāna (Pavamāna regulated the flow of ambrosia (*amrita*) of which the moon was supposed to be composed for which it was called *Sūdānsu*, and which was the food of the gods and *Pitris* : 9, 113, 7). Where *Vaivasvata* (Yama, son of *Vivasvan*) is the king, in the highest heaven, where flows constantly ambrosial liquid, place me there (9, 13, 8). Where one can wonder about as he desires, in the third sphere of highest heaven where the light is ambrosial

(moon beams), place me there (9, 13, 9). Where cravings (Kāma) are instantaneously gratified, where there are desired foods and drinks, where *Svadhās* (damsels) give voluptuous gratifications, place me there (9, 13, 10). Where there are pleasures and merriments, joys and felicities, where delightful heart's desires are fulfilled, place me there (9, 13, 11). Where the good-hearted and the nobles revel, being freed from disease (even hereditary : Janitra : Av. 6, 120, 2), and not lame of their limbs, where fathers see their sons (Av. 6, 120, 3). Stars are the lights of virtuous men who go to heaven (Ts. 5, 4, 1) and seven Rishis have been raised to the stars (*Saptarshi* = Ursa Major: Ts. 1, 11, 1). Teut. heaven was Odin's place—Walhalla, an enormous hall, ornamented with golden escutcheons and lances to which 540 doors led, each so wide that 800 horses could march through them abreast. Here came all the souls of warriors (*Eiðheriar*) who daily rode with the gods on the great plains of Ida and battled with one another, in order to continue after death, the heroic deeds they enjoyed in during life, and every evening returned to Walhalla where seated in a circle they drank rich mead from golden goblets presented to them by the beauteous Walkyren, fed upon the flesh of bear which became whole though a number of steaks cut of its flesh and upon the *apples* of Iduna which preserved them in eternal youth, and they reveled in sexual delights with the ever youthful Walkyran. Rainbow formed the bridge joining earth to heaven by means of which gods descended the earth and the souls of man mounted to Walhalla. Heaven was regarded as canopy, supported by a pole or tree, from which parasol (*satra*) became a symbol of sovereignty with Achæmenides and the Hindus. KA is only praised once (x, 121). In Egy. mythology Ka is the body's immaterial double (*Jivātman*) that hovered over the dead bodies in their funeral chambers. He was in the beginning a golden egg (*Hiranyagarva* : the universe conceived as an egg = *Brahmanda*), the creator of all beings, the only lord. He holds the earth and the heaven together. "Ka, the god, we shall worship with oblation (x, 121, 1 : *Kasmai devāya havishā videma*). Giver of respiration (= life : *atma-dā* = giver of breath. √*Ana* = to breathe. Skt. *āna* = breath ; *an-ila* = breeze. Pra-*āna* = *prāna* = vital breath ; *anala* = that scuffs = fire. Lat. *ani-mus* = spirit, animation. Goth.

uz-anan = to breathe out. Gk. an-emos = wind Gk. atmos = air ; asthma = souffle ; atmen = Ger. atem = Skt. ātman = exhalation), giver of strength, who is the immortal shadow (chāya amritam. √Skū = to cover, to shade. Skt. Skand = to leap upon, to cover ; Chāya = that which covers : the name of Siva, shadow ; chāya = Gk. skia = shade ; Gk. sky-ne = a shelter. Eng. sky = that which covers = heaven) of the dead (disembodied spirits) ; Ka the god we shall worship with oblations (×, 121, 2). Ka is the father-in-law of Prāsthā, the favourite wife of Indra, and Ka is the same as Prajāpati (AB. 3, 22). Ka is Prājāpati (Ts. 1, 7, 6 ; Ms., 3, 12, 5). Ka is Prajāpati ; Ka is happiness (Kaus. Br. 5, 4). Prajāpati is Orion. But Ka is a vague deity. There is no definite source of its origin or mythological development. Skt. Kāya is pertaining to Ka, therefore body, habitation ; Kāyastha = dwelling within the body—the ātman. Ka like Om (Amen, Am or OM) is likely to be Egyptian imports, where they are well-established from great antiquity. Ka is the body's immaterial double (*mritā chāyāmritam* = the immortal shadow of the dead = disembodied spirits = Skt. *Jivātma*) that hover the dead bodies in their funeral chambers. Atman, (Ger. atem, OH. Ger. atum, Goth. ahma, Gk. aitmen = breath. Gk. atmos = vapour) was regarded as then as vital breath and finally the soul's double (Egypt. Atumu), imperishable and eternal, one yet in every being, the first cause and principle of existence (*paramātman*). Amen was the great Egyp. solar deity of Thebes. After him the Christian Churches still say *amen* after prayers, meaning *Be it so*. They borrowed it from the Hebrews who had got it from Egypt. Am or OM also represents the soul of Heh—eternity and immortality. Om is not found in Rv. But three *Aksharas* (letters : A U M) are mentioned in (Av. 13, 3, 6). According to *Ait Br.* (5, 32 ; 7, 18), Prajāpati created the earth, the atmosphere and the sky ; Agni was born from the earth, Vāyu from the atmosphere, Aditya from the sky. Rigveda was born from Agni, Yajurveda from Vāyu and Sāmaveda from Aditya ; from them three pure (sounds) were born—*bhuh* from the Rigveda, *bhuvah* from the Yajurveda, *svah* from the Sāmaveda ; from them three sounds were born—the *a*, *u*, and *m* ; them he brought together ; that made *om* ; therefore with *om* does he say

Pranava; *om* is the world of heaven; *om* is he that yonder gives heat; *om* is the response to a Rik, be it so (*tatheti*) to a *gātha*; *om* is divine, be it so human; verily thus with what is divine and what is human he frees him from evil and from sin (Ait. Br. 7. 18). By *om* consent is understood; when one consents to a thing he utters *om*; for this is the cause of prosperity; when we have a desire for a thing, on its receipt we say *om*, meaning thereby that we have got it (Chān Up 1, 18). So the development of Brahminical *Om* and Bib. *Amen* are similar. And Bib. *Amen*, signifying affirmation, *so be it, so it is or so it will be* (1 King 1, 36; Jer. 11. 4) has been traced to the Egyp. god *Amen* or *Amon* of Thebes. In Greece *Ker* (a female deity) was man's shadow, especially of the dead. *Ka* was carried in Argo boat by ferryman of the dead, *Horus* (Canopus—*Agastya* in Argo). *DANA* is charity. Charity ensures one to success in life and immortality (x, 17, 3). Generosity to the indigent (*akincana*) and tramps (*daridra*) is a social and religious obligation √*Aki*—to be in want of. Skt. *akincana*—Gk. *akne*—Lat. *egere*—indigent. √*Dru* to run. Skt. *druta*=quickly; *daridra*=tramp. Gk. *drap-etes*=fugitive. Ger. *trappen*=to tread; *treppe*=a flight of steps. Gods have not ordained hunger to be (the cause of our) death which is even the lot of the well-fed. The riches of the giver are not wasted, for a non-giver finds no contentment (X, 117, 1). When a needy man comes in a miserable flight begging for food to eat, the man who has got food in store hardens his heart against him, but finds no contentment (x, 117, 2). He is no friend who will offer nothing to a friend who comes imploring food. Let him depart. This is no place for him to stay. Rather let him go to a generous giver though he may be a stranger (x, 117, 4). Let the rich give to the poor implorer, having his eyes on the longer pathway (that is thinking about the future). For wealth now comes to one then to another like the wheels (up and down) of a chariot (x, 117, 5). *Jnāna* (x, 71—*nāma*=Goth. *namo*=Lat. *nomen*—Gk. *onoma*—Fr. *nom*—Ger. *name*—Per. *nam*) is Gk. *gnotos* (gnostics) and Lat. *gnotus*. *Sradhā* (x, 151) is preservation, confidence and piety. √*Sar*=to preserve. Skt. *sar-va*=whole. Av. *har*=to preserve. Gk. *olos*=whole. Lat. *salus*=health; *salutare*=to wish health, salute.

Śraddhā is the preservation of the remembrance (smṛiti) of the Fathers. √Smṛi=to remember; Skt. Smṛiti=remembrance. Lat. memoria=remembrance. Gk. martys=a witness. Armāti (piety) is Armaiti. Skt. śradda-dhāmas=Lat. credimus; śraddadhaṇ=Lat. credidi; śrad-dhitam=creditum.. Śrad may be a development of *hrīd*=Gk. kardia=Lat. cardiacus=Goth: crīde. Av. Vohu Mano=*Vasu manas* (Gk. logos Theos)=Good Thought; Asha Vahista=Asā Vasiṣṭha=Excellent Hope (Eṣhā Vasiṣṭha: S. Br. 2, 4, 42). Khshetra Vairya=Kshatriya Virya=Martial Power; Spenta Armaiti=Svanta (Su+anta-whose end is good=auspicious) Amrita=Blessed Liquor; Harvatat= Sarvatatī (×, 100, 1)=abundance in everything; Amertat=Amritatva=Immortality. Arvastan=Skt. arthajña=wisdom; Kritatu=Skt. kṛitn=virtue; Ristant=Skt. Riju=justice.

AHI (Av. Azhi; Gk. Echis, Echi-dna) is possibly Serpens and Draco both combined. Ahi is shining; for Maruts are called. ahi-bhānavah=shining like Ahi. Serpens is an ancient northern constellation, intimately connected with, but not treated as a part of Ophiuchus. Alpha Serpens is Unukalhai. √Agh=to choke, to strangle. Skt. amhas=pain; ahi=snake; agha=sin. sin. Gk. agk-ein=to strangle; ak-os=anguish. Lat. ang-ere=to choke; angina=quinsy; anxious=distressed. Av. Azhi Dāhaka is biting snake. In Armenian history, the Manda ruler Astyages (Ishtuvegu=Skt. Ishta Bhaga, 584—550 B. C. of Ecbatana) was called Ashdahak=Azhi Dahaka (Zohak). Assy. Sargon in 715 B. C. mentions an ancestor of Astyages as Daiukku, governor of Man (Skt. Manu), was deported to Hamah in Syria. Agbatan was called 2 years later as *bit* (place of) Diakku. After the Manda tribe Media was named. In Purāṇas it was called Uttara Madra. In the Punjab Manda (Marunda) settlement was called Madra which has played an important part in Indian history. It is likely that Ahi (Serpens) was their tutelary god. Draco (Dragon) is a prominent north-polar constellation under the feet of Hercules. Before 2000 B. C. Thuban on its tail was the Polar star. According to the Dorian (Alpines) legend Herakles (Ion. Hercules) killed the Dragon guarding the Hesperian fruit; Hera transferred the Dragon (Draco) to heaven as a reward for its services. According to Hindu legends, Krishna, the Yutean

Alpine, subdued Kāliya Nāg on the Kālindi (Milky Way). About 2000 B. C. Draco lost its pre-eminence, containing the polar star Thuban, by the precession of equinoxes. The Chinese have been worshipping Dragon from great antiquity. Buto, the Greek name for the Egy. Uto, the cobra goddess, sometimes figured in human form (Hindu Manasā) and commonly twined round a papyrus stem, was a representation of Draco. Like wise the fire-spitting serpent that decorated the crown of the Pharaohs. Our Naga Panchami festival takes place when Draco appears on the meridian in the month of July; Bib. Brazen Serpent (*Num* 21, 6) represented it as well. Gk. snake Poseidon, of sea and springs, was an earthquake god; serpent monster Typhon caused earthquakes. According to the Hindus the earth rests on the head of Vāsuki snake and when it shakes its hood the earthquake is caused. The Ophites identified the serpent with Sophia (wisdom); and as a sacramental rite they offered bread to a living serpent, and after the bread was touched by it, it was distributed among the worshippers. Serpents were tended in the sanctuaries of Asklepios (an older Greek name for Ophiuchus), the famous god of healing (Dhanvantari = Sagittarius). Among his symbol was a serpent coiled round a staff and physicians were for long wont to place this at the head of their prescriptions. Asklepios is also represented leaning on a staff while a huge serpent rear itself up behind him or a serpent comes to him from a well. At Athens Asklepios Amaryn had a sanctuary with altar and well, and among the votive offerings have been discovered models of snakes. Hygiea, goddess of health, passed for his daughter and is commonly identified with the woman in Greek art who feeds a serpent out of a saucer. In Thesmophoria, a sowing festival of immemorial antiquity performed by women, pigs were thrown to serpents kept in caves, sacred to Demeter. Bacchae of Dionysus had snake accompaniments or symbolic ornaments. The symbol of the Bacchic orgies was a consecrated serpent and the snakes were kept in the sacred cistae. Athene had her sacred serpent (apparently to third century A. D.) at the Erechtheum which was fed monthly with honeyed cakes; when during the Persian War it left the food untouched, it was taken as a bad

omen. At Lehadia in the shrine of Trophonios (to whom serpents were sacred) offerings of honeyed cakes were made to an oracular serpent. At Delphi a virgin superintended a similar oracle; and in the sacred grove of Apollo at Epirus a nude virgin attendant brought offerings and it was a sign of a plentiful year if they were accepted. So also at Lanuvium, south of Rome, in a grove near the temple of the Argive Hera, sacred maidens descended blind fold once a year with a barley cake and if the serpent took it, it augured a good year. In Sweden even in the 16th century snakes were household gods and to hurt them was a deadly sin. Among the Old Prussians the snakes were invited to share an annual sacrificial meal and their refusal was a bad sign. The Lithuanians kept, fed and worshipped their house serpent (gyrate) till very recent times. Among the Romans every place had its genius in the form of a serpent. Household snakes were fed in vast numbers. Mahammed declared that the house-dwelling snakes were a kind of jinn. There are many American tribes, Apaches, Navahos—who venerate the snakes. Dangerous Cobra was protected by an article in the diplomatic treaty for the Bigut of Biafra Brassmen of Niger. The Python Dahn-gbi of Dohomey is a god of wisdom and earthly bliss and benefactor of man. The children who touch or are touched by one of the temple snakes are sequestered for a year and learn the songs and dances of the cult. Women who are touched become *possessed* by the god. In addition to his ministrant priestesses, the god has numerous wives who form a complete organization. Neither of these classes may marry and the latter are specially sought at the season when the crops begin to sprout. These wives take part in licentious rites with the priests and male worshippers and the python is the reputed father of the offspring. The long life of the serpent and its habit of changing the skin suggested possibly the ideas of immortality, resurrection, wisdom and healing. But its worship originated in the appearance in the sky of Draco and Ophiuchus (Serpentarius), and serpents were venerated as the earthly representatives of their heavenly prototypes. Ophiuchus is Gk. Dionysus and Hindu Siva, known as Bhujangadhara, for he holds serpents in his hands; he is also called *Nilakantha* for a snake holder

he was supposed to have drunk snake poison and became immune to it. Mansāa is a wife of Siva. Bacchantes (Menades) were the female representatives of Dionysus. At the neolithic site of Khirokhitia (40000—3500 B. C.) in Cyprus, human infants were sacrificed before serpent gods. Similar findings have been unearthed of the early bronze age at Vounons, (2500—2100 B. C.). Isaiah (57.5) : Enflaming yourselves with the idols under every green tree, slaying the children in the valleys under the cliffs of the rocks (Mycenaean. I. L. N. Jan. 27, 1941). The Baby. dragon of chaos was represented by Tiamat (Taimāta : Av. 5, 13) with the body of a woman. Her husband *Apsu* terminating on the coils of two serpents was killed by Marduk (Marut—*Apsu* jit : 8, 1½, 2 ; 9, 106, 3). St. Waruna (Varuna) according to Irish traditions rules winds and storm of the ocean. In Cornwall for a successful voyage in ancient times, human sacrifices were made, and maidens were often said to be chained to a rock to be devoured by a sea-serpent and were frequently delivered by aid of some hero who slew the monster. The maiden was offered in sacrifice to the great serpent god or dragon of the sea and the priest of the serpent god who was about to kill her was in turn slain by the warrior. The Keltic water dragon of Scotland has a similar story. The Syrian sea-goddess Atargatis was half a woman and half-fish. The singing of the mermaid is a recollection of the death song of the priestesses of the sea god which they sang before killing the victim. In Gk. myths, Andromeda was chained to a rock on the sea shore as a sacrifice to be devoured by a sea monster, but was rescued by Perseus who married her, attracted by her beauty.

ARANYANI (×, 146) is the abiding forest spirit. The cereal plants and healing herbs are mothers and goddesses (×, 97). A healing herb is a goddess born on goddess earth (Av. 6, 136, 1). Vanaspati is a large tree, the lord of the forest (7, 37, 23). On some trees sylvan spirits or guardian deities dwell. Trees were planted around graves in Greece ; in Roman thought graves were associated with the manes of the pious. The chief sanctuary of the Old Prussians was a holy oak around which lived priest and a high priest known as god's mouth. The heads of sacrificed horses were hung on branches of holy oaks. The

pollution of old Prussian sacred groves and springs by the intrusion of Christians was atoned for by human victims. Sacred fires of oaken wood burned before Lith. Perkuno and the Roman Jupiter. Whether the ancients conceived any constellation or lunar dark patches or forest (grove) in the shape of a tree is hard to say. In Walhalla Odin lived on Yggdrasil tree. Yama lives with gods on a tree (x, 135, 1). Osiris lives on the celestial tree. A bronze Fu Sang Tree Lamp with 10 lights in honour of the moon and brazier for fire-kindling in the time of emperor Yeo (2359 BC.) has been found (I. L. N. Jan. 11. 1936). There is a bronze lamp-holder in the form of a tree with stars above the head and birds sitting on its branches, their eyes beaming with light and lamps in the shape of goose (Cygnus), tortoise (Cancer), dragon (Draco), rat (Capricornus), dog (Canis Major), tiger (Leo) of the Chow dynasty (third century B. C.). A bird stooping down to threaten with its beak a climbing snake. In a relief Tang Dynasty mirror there is a lunar tree, a man rushing to pluck its leaves of immortality (I. L. N. March 7-1937.) The Hindu heavenly grove is Nandana Kānāna and the plant is Parijāta. The Hindu sacred plants are *Aśvatha* (Ficus religiosa), *Dumvara* (F. glomerata), *Vata* (F. Indica), *Durvā* (Cynodon doctilon), Kusa grass (Eragrotis Cynosuroides), *Tila* (Sesamum Indicum), *Tulasi* (Ocimum sanctum), *Kadali* (Musa paradisiaca), *Padma* (lotus), *Haridra* (Curcuma longa), *Deva Daru* (pines), *Amra* (Mangifera Indica), *Amalaki* (Phyllanthus emblica), *Sami* (Prosopis spicijera), *Asoka* (Saraca Indica), *Vilva* (Aegle marmalos with its trifoliate leaves), *Nārikela* (Cocos nucifera), *Nimba* (Melia azadiracta), *Manasa* (Euphorbium pentandra) and *Pārijāta* (Nyctanthes arbor tristis). Apple (Khatti mahlas, Lat. malus, Gk. melon) was sacred. The lunar dark tracings (craters) were regarded by the Hindus as Parijāta or Soma, and the Parsis as Gaekeran, identified with Haoma.

SISNA is Phallus. Phallic worship was possibly customary with the Caspians, particularly of their important tribe Kassite. Phallic gods (Sisnadevah *lingam* and *yonī*) were not in the beginning allowed in Aryan sanctuaries (7, 21, 5). Indra destroyed the phallic gods (*chisnadevan* = Sisnadevan : x, 99, 3). As rats eat up leather phallus (*sisnā*), so cares consumed

Kurusavana who was harassed by Parsavah (Parsas : x, 33, 2-3). Numerous realistic phallic emblems (lingam and yoni) have been found at Mohenjo-daro and Harappa. The three-faced (trimukha) image with buffalo horn headdress, seated on a stool with erect penis, surrounded by animals, found at Mohenjo-daro and Harappa, is of Caspian type with long eagle nose, square face and broad chin but with dolichocephalic head, tall and heavy bony frame. Phallic worship is a form of sympathetic magic to promote the growth of vegetation by means of symbolic sexual indulgence. Phallicism was most pronounced, attended with sexual orgies in the Mediterranean regions, particularly in Syria. In the Dionysiac rites the phallus was carried at the head of the processions and was immediately followed by a body of men, dressed as women (the *ithyphalli*) and by Bacchantes. In Rome the phallus was the most common amulet (fascinum) worn by children. In Naples Museum almost all the household goods, even oil lamps, are in phallic shapes. At Hierapolis (Holy city) in front of the sanctuary of Atargtis there were two huge phalli and the tank of sacred fish. Sexual luxury was the fashion of the temple as in all Mother Goddess (Cybele) or Great Mother of the gods temples. The Hindu *Linga* and *Yoni* cult was introduced by Kāsi (Kassites : Khasa) conquerors. Lingam symbolizes the phallus with a drop of semen on it (*bindu*); the *yonis* is the vulva. Usually *lingam* is inset in the *yonis* (Mohenjo-daro). Evil eye (*aghora-cakshu*) is found in the Vedas (x, 85, 44). To avert evil eye the Egyptians and Babylonians used to wear amulets. Eat not the bread of him that hath as evil eye, neither desire thou his dainty meats (Prov. 23, 6). Among the Kassite boundary stones, stone phalli with rounded tops have been found. NAKTA is the night sky, Rātri The goddess Rātri with her countless eyes puts on glorious appearance (x, 127, 1). The immortal goddess fills the void, high and low ; with her light she conquers gloom (*tamah* : √ Tam = to choke. Skt. *tamas*, Lat. *tenebre* = gloom, timor = fear ; tem-ere = blindly : x, 127, 2). Naktoshas are sisters, daughters of Dyaus. √ Nas = to disappear. Skt. *nashta* = invisible ; *nakta* = Gk. *nyks* = Lat. *nox* = Lith. *naktis* = Russ. *noche* - Ger. *nacht* = ued. *nath* = night. Lat. *nex* = death. Gk. *nekys* = a corpse. Teut. night goddess is Nat,

daughter of Mimer (wisdom) and sister of Urd (dawn). Her lover is Delling—the red elf of dawn (the morning sun) and their son is Dag (day). Nut was the Egyp. sky-goddess with starry garment. SURYA (Kassite Suriaas; Amorite Samas) is the sun. The sun is the most concrete object in the sky. His bright rays bear him aloft. The god knows all creatures so that they may look on *Surya* (1, 50, 1). Like thieves, constellations (nakshatra) slink away with their beams with the appearance of the sun, the eye of the universe (1, 50, 2). His rays are seen afar refulgent over man like flames of fire that dazzles (1, 50, 3). You are the source of brilliance, O *Surya*, the swift observer of the universe, radiating light everywhere (1, 50, 4). This is the best of luminaries, the best of light—all conquering, giver of wealth; it is called supreme (X, 170, 3). Shining with brilliance, you have attained heaven's lustrous region. By you have been brought together all this universe, their multifarious activities and the consciousness of their universal divinity (X, 170, 5). *Surya* is refulgent from the bosom of Ushā (7, 63, 8) who is the spouse of *Surya* (7, 75, 5). The beneficial effects of the solar rays were atleast partly understood. It removes darkness (*tamasa*) by its light in which one can see excellently. *Surya* is the god among the gods. Its light is most excellent (1, 50, 10). Rise today in a friendly way and ascend to the lofty heaven. Unsupported, and not fastened how does he (the sun) rising up not fall down (4, 13, 5). My heart-disease (*hridrogam*), O *Surya*, my jaundice (*harimanan*) remove (*nasaya* : 1, 50, 11). A total solar eclipse is mentioned. When, O *Surya*, you were darkened by demon Svarbhānus, all creatures became bewildered without knowledge of their direction (5, 40, 5). The moon assumes the rays of the sun as his robe as it spins (9, 86, 32). *Surya* ascends the sky with his *Haritas* (7 Colours of rays—Gk. 7 Charites). The wise has crossed the ocean (the night sky) on ship (*nāvam* : 5, 45, 15). *Surya* follows bright Ushā as a youth follows a maiden (1, 115, 2). And as he unyokes his horses (*haritas*) the night spreads out her garment over the whole world (1, 115, 4). ✓ Svar—to shine. Skt. svarga—bright heaven; *Surya*=Av. hvare=Lat. sol=Gk. helios. The Sumer sun god was Babbar, Amorite Shamash (Skt. Samas

=to pervade everywhere); Shamas's wife was his shadow Aa. Surya's consort was Sāya (shadow).

SAVITAR is the rising and the setting sun. Savitar shines after the outgoing (prayānam) of the dawn (Ushas : 5, 81, 2). Savitar combines with the rays of the sun (5, 81, 4). Savitar is *Suryarāsmi*, clad in the rays of the sun, rising in the east (x, 139, 1). Usha brightens up when the (morning) fire is enkindled, and the rising sun diffuses his light far and wide. God Savitar has sent us all to labour and to be active—each biped and quadruped (1, 124, 1). This indicates that the Vedic Aryas were early risers and even before dawn, they made their fire and were busy with their daily pursuits. The bright and radiant Savitar has mounted multi-coloured pearl-bedecked (star bespangled sky) chariot with high golden yokes in dark regions by his might and power (1, 35, 4). O Savitar, your ways are ancient dustless and well-fixed in the mid-ether region. O God come by that path, well-fitted for travells and give us protection and courage (1, 35, 11). Though born by swift steeds, he will yet unyoke them (though the evening sun moves quickly, yet with the nightfall, his journey is stopped). The traveller stops his journey. Even those who marched against their enemies ceased marching. Night has followed Savitar's activities (2, 38, 3). The weaver rolls back her spread out web together; in the midst of work the artisan stops working (2, 38, 4). In every house-hold where man lives, radiates the light of Agni (fire cooks food, radiates light to illuminate darkness of the household). The mother gives her son the best portion (of the food), for Savitar has infused in her the motive (2, 38, 5). Now he returns (home) who had gone forth for profit. For home every wanderer's heart is yearning. And everyone even with his task unfinished hurries home. This is god Savitar's ordinance (vratam : 2, 38, 6). May we enjoy the vivifying force of Savitar the god, and may he give us wealth (6, 71, 2). The adorable Savitar, bright god, (is) supreme wisdom which stimulates our intellect (3, 62, 10). This hymn of Visvāmitra is Sandhā (twilight) paryer.

VISHNU is the apparent course of the sun from the vernal equinox to summer solstice; that is the uttarāyana or the first step of *Vishnu's* three steps (*trina pada* : 1, 22, 18); then to

the autumnal equinox which is Vishnu's second step ; then again from the autumnal equinox to the winter solstice (*dakshinayana*) which is Vishnu's third step. Thrice the god (*Vishnu*) rotates in his grandeur over this earth with a hundred rays (7, 101, 3). Two of Vishnu's steps (at the solstices) are visible to the mortals, but not the third (at the equinoxes : 1, 155, 5). If the three steps of *Vishnu* were the sunrise, the noon and the sunset, then the third step at the setting sun would have been visible and mentioned. (*Vishnu*) like a rounded wheel has set in swift motion 4 times 90 (1, 155, 6). From vernal equinox to summer solstice there are 91 days,—from summer solstice to autumnal equinox there are 91 days. From autumnal equinox to winter solstice there are 91 days. From winter solstice to vernal equinox again the same 91 days. The Vedic Aryans calculated the year of 360 days, consisting of 12 lunar months (two-*Paksha*). Vishnu, the wise can surely see as the eye (the sun) of the heaven (1, 22, 20). The last step of Vishnu (*paramam padam*) is to be seen near the Ursa Major (at the summer solstice : Bhag P. 5, 22, 16). Vishnu's three steps are solstices (*Ait Br.* 19, 3). He goes north for six months and then he stands still (first step), being to turn southwards (at the autumnal equinox). He goes south for six months. He stands still (vernal equinox ; second step), being about to turn north. Thus for the third time they obtain (at the summer solstice) him (*Ait. Br.* 19, 3). Vishnu is universe in the cosmic *Sisumāra* (dolpin), enclosing within its coiled body all the constellations and planets. In the end of the tail of *Sisumāra* is the *Dhurma* (Thuban), in its beginning *Prajapati* (Orion), *Vayu* (Arcturus), *Indra* (Centaurus) and *Dharma* (= Yama = Perseus). Above the tail is the *Dhatā* (Virgo). On its hip is situated *Saptarshi* (Ursa Major). On its southern side is *Abhijit* (Vega) and *Punarvasu* (Pollux). On its back is *Ajabitha* (Capricornus), and within its intestine is *Akāsa Gangā* (Eridanus). On its right and left buttock are *Punarvasu* (Pollux) and *Pushya* (Sirius). In its right and left legs are the *Ardra* (Betelgeux) and *Ashleshā* (Alphard). In its right and left alae of the nose are the *Abhijit* (Vega) and *Uttarāsara* (Elkaridab) ; in the right and left eyes *Sravana* (Altair) and *Purva Ashara* (Kaus Australis). Within

the right left ears *Dhanistha* (Castor) and *Mula* (Shomlek). In the neck is *Purva Bhadrpada* (Markab), in the right and left shoulders *Satavishā* (Skat) and *Jestha* (Antares). In the right cheek is the *Agastya* (Canopus) and in the left *Yama* (Perseus). In the mouth is the *Mangala* (Mars), in the penis *Sani* (Saturn), in the neck *Vrihaspati* (Jupiter), in the heart *Surya* (the Sun), in the mind *Candra* (the moon), in the breasts *Asvins* (Pegasus and Equuleus), in the navel *Budha* (Venus), and all its hairs are stars (Bh. P. 5. 23). Vishnu is represented in modern Hindu worship by an ammonite, its internal spiral chambers being similar to 360 daily wheels (*chakra*) of Vishnu. Possibly it also represented the zero conception of the Buddhists. It is known as *Nārāyana*. There is a Hittite god *Inar* = Gk. *aner* = Skt. *nara* = man = son of man. *BHAGA* (Kassite *Bugaas*) represents the course of the sun from the autumnal equinox to winter solstice, that is the harvest season. May *Bhaga* be our true *Bhagaban* (bliss giver). And through him, O Gods, may happiness be ours (7, 41, 5). *Bhaga* associated with harvest and marriage (x, 85, 28; 14, 1, 20) became general god of blessings (Av. 5. 26, 9). *Uttara Phālguni* (Denebola in Leo) is associated with *Bhaga* and is called *Bhāgya*. *Ahura Mazda* is *Mapista Bhaganam* and *Aniya Bhagaba*, meaning god. Slavic *Bogu* means god. Phrygian *Zeus Bagaio*s means god *Zeus*. Greek *Phegonais* means Oaken god. √*Bhog* = to obtain one's share, to enjoy. Skt. *bhaksh* = to eat; *bhoga* = eating, enjoyment; *bhoja* = leading a life of enjoyment; *bhaga* = prosperity, enjoyment, vulva, sexual pleasure. *Bhaga* = Av. *bagha*, Iran. *bagā* = O. Sl. *Bogu*, *bogatu* = Lith. *Bogatas*, *na-bogas* = Gk. *Zeus Bagaio*s = Kassite *Bugaas*. Gk. *phog-ein* = to eat; *phegos* = oak acorns. Lat. *fagus*. As. *boc* = beech. *Bhaga* representing the harvest season is symbolized by the northern constellation *Cygnus* which becomes very prominent in the sky on the Milky Way in September in the shape of a swan. In the harvest festival, the Egyptian, Ethiopian, Teutons, and even to day the Danes and Americans feast on goose. The German great festival was held in the autumn. On this day wheaten cakes in the shape of horns were baked in honour of god *Thor* which are now baked in northern Germany in honour of *St. Martin*. *St. Martin's* goose also appertains to these ancient superstitions. In U. S. A.

Thanks-giving Day which takes place on the last Thursday of November is celebrated with feasting on roasted goose with reddish cranberry sauce.

MITRA is the course of the sun from the winter solstice to vernal equinox. *Mitra* is Avestan *Mithra* and the chief deity of the Mitanni which was especially invoked in their alliances and treaty obligations with other friendly peoples. *Mithra* was the chief god of the Zoroastrians and became the fashionable object of worship of the Roman aristocracy, particularly of the army officers. The birth of *Mithra* was held at the winter solstice when the (Christmas) day begins to lengthen. But the great festival of *Mithra* was celebrated at the vernal equinox (the present Easter). In these festivals *Mithra* is represented as a valiant youth with a conical cap on his head slaying a sacred bull with a dagger; a scorpion = *Ahriman*; serpent drinking its blood; the dog, as a guardian of the dwelling springing towards the wound in its side, wheat sprouting on the side of the tail, symbolizing the result of the sacrifice. The meat was partaken and much drinking was indulged in the midst of merriments. It was the mythological representation of the sun (*Mithra*) entering into *Taurus* at the vernal equinox, and *Scorpio*, *Serpens* and *Canis Major* are in opposite colure to *Taurus*. *Mithra's* messengers are the raven (*Corvus*) and a lion (*Leo*). Early Christianity owes its origin to *Mithraism*. The sanctification of Sunday and of 25th of December, the atoning sacrifice and the resurrection of the flesh, Christianity borrowed from *Mithraism* which was the popular cult of the Roman army and merchantile classes. Since the time of Augustus in first century B. C. to 1st century A. D. Roman emperors encouraged *Mithras*m for its support to monarchy.

VARUNA is the course of the sun in the sky from summer solstice to autumnal equinox; *Bhaga* from autumnal equinox to winter solstice; *Mitra* from winter solstice to spring equinox; and *Indra* from spring equinox to summer solstice. *Varuna* is Greek *Uranus* (*Uaruno*, *Uranos*) and *Khatti Arun* (ash = honorific title), meaning the sea, and the heaven; *Mitanni Uruwana*, Av. *Varan*. *Varuna* is orderly, white in colour and his garments are golden. *Varuna* is *Agni's* brother and friend (4, 1, 2). *Ushas* (dawn) is *Varuna's* sister (1, 123, 5). *Varuna* wears

a golden mantle (drapi) and puts on a shining robe (1, 25, 13). *Varuna's* messengers are thousand-eyed (Av. 4, 16, 4). This indicates the nocturnal aspect of the *Varuna* and stars are his messengers. *Varuna* makes his own lustre white and black (8, 41, 10). This shows that *Varuna* is both the day and night sky. He has made the golden swing (the sun) to shine in heaven (7, 87, 5). He has made a wide path for the sun (7, 87, 1). The wind which resounds through the air is *Varuna's* breath (7, 87, 2). He has placed fire in the waters, the sun in the sky and *Soma* on the rock (5, 85, 2). By *Varuna's* ordinances (vratani) the moon shining brightly moves at night and the stars placed up on high are seen at night, but disappear by day (1, 24, 10). This clearly indicates that *Varuna* represents the sky from summer solstice to autumnal equinox. During the summer not only the sun is very warm, it is the season of the monsoon, so *Varuna* is associated with water. Greek *Ouranos* (*Uranus*) is Heaven, the husband of *Gaea* (Vedic *Go*=the Earth). $\sqrt{\text{vri}}$ =to cover, to surround. Skt. var-man=armour; varna=colour (orig. a covering); *Varuna*=Sky. Gk. erion=wool (covering), *Ouranos* the sky. Lat. or-nare—to adorn (cover); uel-lus=fleece, *Ouranos* used to bind his children of *Gaea* and bury them in her bosom, thus swelling her body. *Gaia* instigated her son *Kronos* to emasculate *Ouranos* with a sickle. *Varuna* was deprived of his virility (Av. 4. 4. 1. mrita-bhrajā). *Varuna* used to cause dropsy. In the Polynesian legends there is the myth of the separation of the Heaven and the Earth from the their primeval unceasing connubial embrace. It seems likely therefore that the *Kronos* and *Gaia* myth originally belonged to the Caspians, from whom the Aryans borrowed it. *SOMA*—*Chandrama*—*Pavamāna*—*Indu*—are the names of the moon. *Soma* is *Baby. Śin*, a corruption of *Zu-ena*=knowledge lord. *Soma*, *Pavamāna*, *Indu* are the same (9, 11, 9). *Pavamāna* has produced periodicity (lunar) and pretty light, destroying darkly gloom (*krishna tamānti*: 9, 66, 24). Through the night (*naktam*) *Chandrama* moves in splendour (1, 24, 10). The ancient one (*Indra*) has awakened the young moon (crescent moon) from slumber who runs his circling course with many (constellations) round him. Behold the great divine wisdom. He who died yesterday (new moon) is living to day (x, 55, 5). Through eternal laws

(*satya* : ✓ *Sadh*=to lead straight to a goal, Skt. *Sādhana*=accomplishment; *Satya*=reality. Lat. *satis*=enough; *satiatus*=to satiate. Lith. *sotus*, *sotis*=sated, full), the earth stays firmly in the heaven by the sun; through laws (*rita*), the luminaries hold fast and Soma stays in the heaven (x, 85, 1). Through Soma the luminaries are strong; through Soma, the Earth is great. Thus Soma has his place in the midst of constellations (x, 85, 2). The ancients believed that the moon beams were essential for plant growth. For this reason Soma is said to have generated all the plants (1, 91, 22), and is therefore called lord of the forest *Vanaspati* (1, 91, 6). Of all the plants Soma (*Cannabis indica*) is the king (x, 97, 19). Soma plant is pressed between stones into a paste which mixed with butter milk, honey and roasted barley powder is strained through woolen clothes (9, 69, 9) and made into a pleasant intoxicating beverage. This Soma drink (*Av. Haoma*), Soma plant and Soma as the moon, though entirely separate, have been in later Vedic times confused into a religious ritual. *Pythia* at Delphi chewed laurel leaves and berries (*Laurus nobilis*) which are aromatic, exultant and narcotic and in intoxicated and convulsed state with frothing mouth delivered her oracles. The moon itself was supposed to be full of ambrosia which was the food of the gods and *Pitris*, though the moon assumes the rays of *Surya* for his robe (that is the moon beams are the reflected light of the sun on the lunar surface), spinning in his movements (9, 86, 32). Soma contains honeyed drink which being fed by the gods and *Pitris*, is reduced in size and the solar rays make the supply full (*Matsya P. Ch.* 59, 50; *Ait Br.* 7, 11; *Sat Br.* 1, 6, 4, 5; *Kaus Br.* 7, 10; 4, 4; *Chand Up.* 5, 10, 1). *Rākā* is the full-moon. She is lovely in form and giver of blessings (*subhagā*). With a never-breaking needle she mends the leathern armours of heroes and grants wealth and heroic sons to her adorers (2, 32, 4-5). *Rākā* in later mythology developed into *Ramā* and *Laksmi*, wife of *Vishnu*, and giver of prosperity. *Rākā* is the Gk. *Tyche* and the Roman *Fortuna*. *Fortuna* is a very ancient Roman deity and was worshipped over the whole empire. She is represented on coins with a cornucopia as the giver of prosperity, a rudder as the controller of destinies and with a wheel or standing on a ball to indicate the uncertainty of fortune. *Sinivāli* is

the crescent moon. Sinivāli is sister of gods. Sinivāli is broad-tressed (horns of crescent moon) and mother of many sons. She is queen (Vispatni = Vispala who was given iron legs by Asvins; that is the crescent moon began to grow larger: 2, 33, 6). *Gungu* is the half-moon; *Kuhu* or *Kālī* is the invisible new moon. Asvins restored *Kālī*'s (new moon's) strength. *Kālī* in later mythology became goddess of time (*Kāla*) and death. *Kālī* is Gk. Karon (Charon) who conveyed in his boat (time) the shades of the dead across the river Styx (Milky Way). For this service he was paid with an obulus which coin was placed in the mouth of every corpse before its cremation. Karon is represented as an aged man (representing time) with a dirty beard and a mean dress. √Svar—to shine. Skt. svarga=shining abode (sky); Surya=the sun. Gk. selas=splendour; selene=the moon: Hera = Skt. svara=the heavenly light. Lat. sol=the sun; serenous=bright, serene. The dark half of the moon—Ayuva (Sat. Br. 8, 4, 2, 11)—is the Greek Aia. Ushas is the Dawn Maiden. Ushā shines with the light of the sun, the light of her lover (1, 92, 11). Surya goes from behind after the shining goddess Ushā as a man follows a maiden (1, 115, 2). Tarry not O daughter of the sky (divo dūhitā=Lith. diw-dukte, the name of Ushas) or Surya in his glowing ardor may clasp you in his fiery arms and brand you as a robber is branded with the marks of a thief (5, 79, 9). There in the east, the Heaven's daughter, appears in the garment of light (1, 124, 3). Ushā smiling and well-attired, like a wife to husband, reveals her beauty (1, 124, 7). Lordship for one, renown for another, gain for one, working pursuits for others—for means of livelihood for all—Ushā has awakened every one (1, 113, 4). This youthful Heaven's daughter appears flushing in her shining raiment. As a maid embellished by her mother, you are showing your charming beauty to all (1, 118, 7). Like a maid, revealing her beauty, O goddess, you are going to the god who is longing to win you. And smiling and youthful, shining gloriously, you are exposing your bosom to him (1, 92, 4). Ushas is the first to be invoked (*prathamā*) at every morning sacrifice. She is almost the foremost goddess (*agriyā*). Ushas is Greek Eos, Lat. Aurora, Lith. Auszra, Teut. Eastur. Eos is also called *Erigenes*. Ahanā comes near to every home—she who makes

every day known. Pleasure-loving *Dyotana* comes everyday and takes the first portion of every offering (1, 123, 4). *Ahana* is the Greek Athene and *Dyotānā*—Daphane. *Ushas*, springs from the fore-head (east) of the sky (*murdhā divah*). Athene sprung up from the fore-head of Zeus (*Dyaus*). As *Ushā* is followed and loved by Surya, Daphane is similarly pursued by Apollo, being charmed by her beauty. Bhaga's sister, Veruna's twin-sister, *Ushā* endowed with excellent conduct (*sunriti*) is the object of our adoration (1, 123, 5). Athene is noted for her wisdom like *Ahanā* (*Ushā* √ush=to shine. Skt. *ushna*—hot; *Ushas*—shining, dawn. Gk. *eos*—dawn; *Heleos*—the sun; Lat. *aurora*=dawn; *aurum*=gold). *Ushas* is called *Mahi* (grand), Greek *Maia*.

12.—RACIAL COMPONENTS OF INDIA

Australoids spread over the country in paleolithic age. They have been mostly absorbed. Pure Australoid is difficult to find, though the Australoid forms the base of the population, and is a primary constituent of the lower strata of the society. Australoid is found still in a few isolated forest caves of Ceylon known as Veddhas. Paleolithic quartz and chert implements such as hammer-stones, arrowheads, cores, worked flakes and scrapers have been found in the old Veddha caves of Katragam and Uva in Ceylon as in Narmada valley bed. The Veddha is of medium height with slight muscular development. He is wavy haired with black deep set eyes. His head is long and narrow, with snub bridgeless nose sunk at the root and wide nostrils. His brow ridges and cheekbones are prominent. His usual food consists of jungle yams and berries, dried flesh and honey. Veddha is particularly fond of meat of iguana and ape. The Veddha will not eat the flesh of elephants, oxen, leopards, bears, jackals, wild and domestic fowls. The Veddha clan system is based on mother's descent.

The daughter and son represent mother's family. No one must marry within the same family. The right marriage for a Vedda is to take the daughter of his mother's brother (preferably the younger), and for Vedda maiden to marry her father's sister's son or her mother's brother's son. The children of brothers and sisters are regarded as brother and sister (*hura* and *nena*), and sexual relation between them is regarded as incest. Marriage takes place even before puberty. The prenuptial sexual unions between allotted couples are viewed with tolerance. There is a strict avoidance between mother-in-law and son-in-law. Sometimes two brothers have a common wife, and two sisters have a common husband. Second marriages are frequent, a man usually marrying sister of his divorced or deceased wife, and a woman her divorced or dead husband's brother. But infidelity either of husband or wife is very rare. The children are well cared for, old age is revered. The Veddas believe that the spirit of their dead relations *Nae Yakku* haunt the vicinity of their caves and are able to protect them if propitiated, and to do them mischief if ignored. Besides these they revere the spirits of their legendary hero brothers—*Kande Yakka* and *Blinde Yakka*, to whom the *Nae Yakkus* are subservient. When a man dies in a cave they cover his body with leaves and branches, abandon him, and leave the cave in haste, for fear that if they stayed longer, the *Yakku*, the spirit of the dead person might do them harm. The *Mahawamsa* called the original inhabitants of Ceylon as *Yakkhas*. The Chinese pilgrim Hiuen Tsang called the Veddas as *Yakkhos*. The skull found in 1912 at Sialkot is of Vedda type. Austric boomerang is known among the Kallan and Maravan tribes of Tanjore as *valari* or *valai todi* (bent stick) which is worshipped among them and exchanged between the husband and bride in the marriage ceremony. With the Maravan there is still a current proverb—Send the *valai todi* and bring the bride. There are elements of Austric roots in Dravidian languages. Among the Himalayan Tibeto languages, one spoken near Darjeeling is called *Yakha*. *Yaksha* seems to be the generic name of the pure Australoids, or *Yaksha* was a tribe of the Australoids. Ravana, Pulasta ruler and his ancestor Kuvera are mentioned to have ruled over *Yaksha* tribes.

NEGritos were known as *Nishādas*, black as crows, very low in stature, with short arms, high cheek bones and snub-nose (*Bhāg* P. 4, 14, 44). They have the complexion of a charred stake with flattened features and dwarfish stature (*Vishnu* P. 1, 13). The wretched *Nishādas* live in the hills and forests (MBh. 12, 59, 94). Among the *Kādīrs*, *Paniyans*, and *Mala Vedans*, the jungle folk, frizzly hair is sometimes met with. The *Kādīrs* and *Mala Vedans* chip all or some of their incisor teeth, boys at the age of eighteen and girls at the age of ten or thereabout into the form of a sharp-pointed, but not serrated cone with a chisel or. bill-hook and file. Negrito Jakuns of Malaya Peninsula are accustomed to file their teeth to a point, and the practice of filing and blackening the teeth is a necessary prelude to marriage; and the common expression that a girl is nubile is to say that she has her teeth filed. The Negrito Semang and Sakai women of Perak wear a kind of bamboo combs in their hair with intricate designs as a charm against diseases. A Kadir youth always makes a bamboo comb of similar design and presents it to his wife just before or at the conclusion of marriage ceremony, and who always wears it in her hair, and Kadir young-men vie with each other as to who can make the nicest comb. There is a Negrito tribe on the Persian gulf and in Susiana. There are strong Negrito elements among the *Nāga* tribes of Assam. In Burma there is a Negrito tribe called *Selung*. The Negrito has imparted to our aboriginal population curly hair, black complexion and dwarfish stature.

MONKHMER offshoots are numerous in this country. Not only the Finno-Ugrian Munda speaking aborigines, but also the lower classes of Bengal and Southern India belong to them. The racial mixtures might be slightly different in various tribes. The buffalo (*Mahisha*) culture of the Mon. Khmers is represented by the *Māhishya*, *Kaivarta* agricultural tribes of Bengal, *Mahisha Asuras* of Purānic traditions—the ancestors of the lower classes of Deccan, and the *Todas* of the Nilgiris. To the Finno-Ugrian Munda stock belong the *Lāhuli*, *Kurku*, *Munda* and *Savara* languages. The Munda languages are *Juang*, *Godābā*, *Kharia*, *Nahali*, *Kherwari*, *Mahle*, *Kārmali*. To the Khervari group are affiliated the *Kodā*, *Turi*, *Birjia*, *Asuri*,

Agaria, Birhor, Korwā, Bhumij, Ho, Mundari and Santali. That the Munda languages have elements of both Mon-Khmer and Finno-Ugrian tongues is owing to the fact that in the composition of the Mundās there are the racial factors of Mon-Khmers who were formed in the Mekkon valley and Palae-Alpines who spoke Finno-Ugrian tongues. If not in Assam, at least in Northern Bengal and Southern Bihar the Mundās got admixture of the Anavas who dominated there and came under their influence, and the Anavas were Palae-Alpines. The Santhal is mostly a blend of the Australoid with the Mongoloid. Santal is of low stature with an angular roundish face with broad nose, thick lips, high cheek bones, scanty beard, coarse and occasionally curly hair due to Negrito admixture. Santals occupy the undulating forest land at the foot of the Rajmahal Hills, Hazaribagh and Manbhum. The arms of Santals are battle axe like the Gonds, bow and arrows. Armed with these Santals go out to hunt in a body, pursuing wild animals of all kinds except tigers and bears. Santhal is a lover of nature. He never fells down any useful or ornamental tree which gives his clearings a park like appearance. Santhal is fond of music and dancing. His flute is a simple instrument made of the bamboo, but gives out deep, rich vibrating melodious tones. Every Santhal village has a dancing ground where youths and maidens meet in the evening to dance and to sing. The maidens decked with flowers and feathers pair off with young men, all blithely dancing round a circle, their feet falling in fine cadence and singing delightfully to the tune of the musicians in the centre. They enjoy great freedom in social intercourse. Marriages are based on mutual selection. But it is a wholesale group marriage the life of which is still practised in Brittany on the eve of Lent. In the month of January all the candidates of marriage are assembled together and are permitted to have promiscuous intercourse with each other. Each lover selects his future wife after the joyous carnival which lasts for 6 days and is known as *Bandana*. When husband and wife do not pull on together, divorce is permitted by the Panchayet. ORAON lives in the Chotanagpur plateau. Oraon has a larger mixture of Negrito in him, betrayed by his dark complexion,

projecting jaws, dwarfish stature and low and narrow head. His speech is akin to Kanarese. He is known as Dhāngar (hill-man). He has been forced to this wild forest region by the pressure from Konkan of other later immigrants. As in Melanasia the bachelors of the village have a common hall (*Dhumkaria*) to themselves where they stay and not with their parents, while the maidens are billeted with the widows who if not discreet often allow them to mix freely with their lovers. Discipline is strict in Bachelors Dhumkaria where there is an elaborate system of fagging, the smaller boys waiting on the elders, rubbing their limbs and combing their hair. The bachelors hall has a dancing arena before it where youths of both sexes frequently meet to dance and to make love and during festival they usually dance throughout the night with carousal. Marriage is usually based on mutual selection. Oraons have two festivals—*Sarhul* which solemnizes the marriage of the earth and *Karma* which celebrates a plentiful harvest. Oraon cannot marry a woman of his own sept, but there is no objection for Oraon marrying a woman of his mother's sept; but he cannot marry the first cousin on the maternal side, nor his younger brother's widow, but he can marry his elder brother's widow or a deceased wife's younger sister. MUNDA principal tribes are Gadaba and Korku. Gadabas are found in Baster State and in Vizagapatana District. Sexual morals are loose. Many irregular unions are recognized among the Gadabas as a marriage. Thus a man is permitted with the help of his friends to go and carry off a maiden and keep her as his wife, more especially if she is a relative on the maternal side, more distant than first cousin. Another form is *Parsā Mundi* by which a married or unmarried woman may enter the house of a man of her choice and become his wife. It is known as *Upalia* when a married woman elopes with a lover. With the Bonda Godabās morals are stricter. The selected bride and the bridegroom retire to a jungle and light a fire there. Then the bride placing a burning stick presses it on the man's skin. If the man cries, he is unworthy of her and she leaves him and remains a maid. But if the bridegroom can bear the pain with courage, then marriage is consummated at once by sexual union. Of course if

the girl has sincere love and regard for him, she may touch his skin very lightly with the burning stick. With the ripening of the mango there is the *Ittakparva* carnival. The whole male population turn out to hunt. And if they come out unsuccessful, women pelt them with cowdung on their return. But if they succeed, they cook the games before Mātideo, the god of hunting, and feast on it. Men and women dance together to the music of a pipe and drum. Sometimes the women dance singly or in pairs, in a circle, their hands resting on each other's waists. A man and a woman will step out of the crowd and sing at each other in obscene language and gestures. In the Purānas (Vishnu P. 4, 24, 13) Garddhava is the name of a dynasty and the Andras were succeeded by Gardabhila. Garddhava is likely to be the Sanscritized form of Gadaba. And Gardabhila might be a mixed population of Gadabas and Bhills. In the Jaina Kālakācaryakathā it is mentioned that the Jaina saint Kālaka was insulted by king Gardabhilla of Ujjaini. Kālaka persuaded a Saka satrap to invade Ujjaini who overthrew the dynasty of Gardabhilla. According to some legends Gardhabhilla is the father of Vikramādityā; and according to others Vikramāditya's father was Gandharvasena who had been cursed to wear to shape of Garddhara (ass). According to Atharva Veda (4, 37, 7) Gandharvas are fond of dancing and are lascivious. Is Gadaba made into Gandharva and Gardhava and Gardhabhila? And Gāndhāra has been named after the tribe. Gadaba is also very fond of singing, dancing and lascivious. Gadaba being a Munda clan, and Munda is a corruption of Manda—a Cimmerian tribe, it is very likely that Gadaba was once a very powerful people and spread over central northern India and Afghanistan, and though now its Manda Cimmerian blood has been diluted beyond recognition by the infusion of Mongoloid, Negrito and Australoid bloods, it has not lost its ancient Manda traditions. **Korku**, another Munda tribe, live in the Western Sātpurā plateau. The Korkus are poor, but remarkably honest and truthful. Korkus are of medium height, of dark complexion, has a roundish angular face, sub-brachycephalic low skulled head with a short and wide nose, prominent cheekbones and a scanty beard. But the Korku is wellbuilt and muscular.

Korkus do not marry in their own sept as well as their first cousins. When the bridegroom is dressed for the wedding he is given a sword carrying a pierced lemon on the blade, and he with his parents and relatives proceeds to the foot of a plum tree (*Ber-Zizyphus Jujuba*) when a fowl is sacrificed with the sword and the blood is split over the root of the plant. The party then dance round the tree. Before the marriage procession is formed, a blanket is spread in front of dwelling and the bridegroom and his elder brother's wife are made to stand on it and embrace each other seven times. This is the survival of the modified fraternal polyandry, still practised by the Khonds, under which the younger brothers are allowed access to the elder brother's wife until their own marriage. The ceremony then typifies the final embrace and cessation of this union at the wedding of the youth. When the procession reaches the bride's house, under the leadership of the bridegroom's aunt or other collateral female relative, she then searches for the bride. The bride is found hidden and closeted with her brother-in-law and who brings her forward to the pandal where the ceremony is concluded with a dance, feast and an orgy of drunkenness. Marriage is usually adult. The girl is generally married at 16, and the boy at 20. The Mundas who rarely see horses in their wild tracts make little clay horses to offer to their dead to carry their spirits to their ancestors. Mandas (*Cimmerii*) were great horse-riders. Their sexual morals were loose. They practised fraternal polyandry. All the brothers usually married all the sisters, so that joint family and joint property could be preserved and protect family unity and solidarity. According to our Purānic traditions Kinnara (*Cimmerii*) and Gandharva (*Gadaba*) of which Manda is a tribe, are depicted as very lascivious, fond of dancing and singing.

Savara (*Sawara*, *Saonr*, *Sahr*) is found in Bundelkhand and in Ganjam and Vizagapatnam, numbering about 100,000. It seems that they had occupied all this land but were separated by the intrusion of Gonds (*Khonds*) who now occupy the intervening wild tract of territory. Scythian words for axe was Sagar or Savar, as in their language *g* and *v* were interchangeable. Savaras are accustomed always to carry an axe with them and to worship it. We know the Mycenæans in Crete were

accustomed to worship a double bladed axe. And Mycenæans are Caspians like the Sycthians (Sakas) and Cimbri, Vedic Sambara, a Mon-Khmer tribe (formed of the Cimbri with the Australoids) that moved to India and spread all over the country. In the Indus valley three-faced statuette headdresses two buffalo horns are indicated. Buffalo was associated with Mon-Khmer culture. So it can be easily conjectured that the statuette represented a Mon-Khmer Savara (Vedic Sambara) who still wear buffalo horns in their war tribal dances and speak mixed Mon-Khmer Munda language. In Ait. Br (8, 18) Sabara is associated with Kausika Visvāmitras. Savara marriage usually takes place after adolescence. Savara bride is taken to the forest and tied to a Mohua tree (mock capture) and then taken to her brother-in-law who is permitted to talk to her in a an obscene and jesting manner (survival of fraternal polyandry), after which there is regular feast and dancing, which culminate in nuptial union. Widow is bound to marry her husband's younger brother. In case he is married and declines to take her, she can take a new husband who pays something either to father or her deceased husband's relatives. Divorce is permitted. Savara women are tattooed, and some times men also. Savaras worship Bhavāni (Artemis) and Burādeo (ancient god), called also Bhairava (masculinized Atremis : Dionysus) with human sacrifice, now kids; wine and sexual orgies. GONDS occupy the wild highlands of the Central Provinces, the heart of the peninsula. The KHONDS occupy the forested hills of Orissa. Both seem to be the two divisions of the same Mon-Khmer tribe, but not speaking Munda tongue. They came later than the Mundas. Khonds are lighter in complexion, taller in height and have a higher elevation of the nose than the Gonds. That indicates that they had a higher percentage of the Caspian blood in them. Or the Gonds have been mixed up with the Mundas. A tribe of the Gonds nearest to Cuttak is called Gor or Gaur. Actually Gond if correctly pronounced is Gonr ; d is pronounced as r, as Chandāla another branch of the Khond is called in Bengali as Chārāla. The Gond still fearlessly moves about the forest with a hatchet in his hand and subsists on roots, berries and wild honey and the game he kills with his arrows. In the wilder parts of Amarkantak and Chatisgurh they kill

their parents and relatives and feast on their cooked meat, as was customary with the Massa-Getæ. Before the temple of Bhavāni in the Amarkantak region, human sacrifices were made, the victims being waylaid and captured. There is also Burra Deo (ancient god) before which human sacrifices used to be offered in the past. The Gaur Brahmins of Bengal and the Punjab seem to be the priests of Hinduized Gonds. Gonds near Cuttak are called Gour. So it is natural that the Gond priests are known by the name of Gaur, the nasal sound of *n* being dropped. The Gaur Brahmin is held in particularly low estimation. Majority of them have adopted agriculture. And a few are priests of Hinduized lower classes. The Khonds in their forest tract always have with them a double-bladed axe. The Khond youths and maidens have separated living quarters. But the Khonds are very lascivious and youths frequently meet and make love to their own inclinations. And unmarried girls are not disgraced by motherhood. But formal marriage requires parental sanction, and a bride-price has to be paid. When the bride-price is paid there is a feast and drinking orgy in the midst of which the bride is carried off on the back of the bridegroom while all the maidens of the bride's party follow the abductor and throw stones, sticks, fruits, coloured rice at him, shout out at him insults, call him thief and ravisher till he reaches his dwelling, when his assailants return drinking, dancing and singing obscene songs. Women have the right to leave their husbands 8 or 10 times in their lives. Human sacrifice (*meriah*) was prevalent among the Khonds in ancient days to their war god to insure victory and to earth goddess for fertility. The victims had to be of a different tribe, and were well-treated. If a female she was encouraged to have all the pleasures of life and to have children to promise satisfactory good crops. If a male all the delights he could wish. Women took pride to have sexual congress with him. Cultivators and herdsman thought it luck to give him a feast. The *Zanee* (priest) officiated at the ceremony through the medium of the Toomba, a Khond child under seven years of age. For a month prior to the sacrifice there was much feasting and drinking with dancing round the *Meriah* who was adorned with garlands in the sacred grove. On the day of the sacrifice the victim is stupified with sexual orgies.

and drinks, and the assembled multitude sing and dance—O goddess, we offer a sacrifice to you. Give us good crops in return, good time and good health. The victim made senseless by intoxication is thrown into the pit and the victim's face is pressed down to die out of suffocation. Then the *zanee* and after him all the cultivators cut pieces of flesh from the victim and bury them in their grounds. Nānuka Chandel (Chandāla), a feudatory chief of Bhoja and Mohendrapala about 830 overthrowing a Parihara chieftain, dominated southern parts of Jejakabhukti. Chandels are found in the Simla hill state of Bilashpur. Chanal is also a corrupted form of Chandāla. Chanals are found as a menial class of Kangra and Mandi. The Gond priests when Hinduized have become Gaur (Gonda Dt) Brahmins who are found in W. India, Oudh, S. E. Panjab, Kangra and Chamba. TODAS of Nilgiris, a dwindling pastoral tribe (540), are heavily-framed tall dolichocephals with long thin highbridged prominent slightly aquiline nose, elongated broad face, fine bearded people. They have bold-bearing open eyes but with low brows and heavy mouths. Todas have rich brown complexion. The Todas practise fraternal polyandry; all the brothers and cousins jointly marrying all the sisters of another family. When Toda dies, two or more buffaloes are sacrificed so that they may be servicable to the dead man in his next world. Todas believe that their god Teikirzi created out of dust a Toda and a buffalo with a bell tied round its neck. Of all the Mon-Khmers with buffalo culture that have migrated to India, it seems that the Toda has the largest amount of Caspian blood in him, mixed with the Australoid. As the Todas are the pastoral tribe of the Nilgiris, the Kotas are the artisans and the Badagas are agriculturists of these hills. Near Kotagir there are dolmens, flat stones placed on upturned stones as among the Mon-Khmer speaking Khāsis, and in Europe; close to the village of Bethachada there is a row of cromlechs carved with figures of the sun and the moon, enclosed within a stone circle which the Badagas claim to be the work to the work their ancestors and to which periodical offerings are made. Badagas have separated dairy houses near a temple dedicated to Heththe, of which the priest like the Toda *Palol* a celebrate, and like him equally licentious. At the funeral ceremony a cow-buffalo is led three

times round the bier and a little of its milk drawn at the time is put into the mouth of the corpse. And then a buffalo calf is led near the dead man and his head is placed on calf's head; and the calf's tail is placed in his hands. Adult marriage is the general rule among the Badagas, based on mutual inclinations. But Badaga women often change their husbands as long as they have beauty, youth and health, and when they lose their charms and find that love-making and frolics are inexpedient, then they stick to their last husbands. It is the custom among the Badagas that when a woman's husband is away, she is accessible to her brothers-in-law. Widow usually marries the brother of her deceased husband, and widow marriage is very common. Levirate is simply an evolutionary step higher than fraternal polyandry. When a Badaga is in want of assistants and if he has a daughter, he may promise her to the son of a relative or friend. And the boy serves the father of the betrothed as one of his own family and after they attain their adolescence, their marriage is consummated and he becomes a partner of the general property of his father-in-law. But where the husband is much younger than his betrothed, until he reaches his maturity, she can have sexual relationship with her paternal aunt's son; in case there is none any one she likes. The head Panchait of the Badagas, Monegar, when he visited any village within his jurisdiction had the privilege of having any married woman or maid according to his choice to share his bed at night. Nambudiri Brahmins of Malabar may be the advanced guard of the Todas. Nambudhiri has the fine beard like the Todas and resembles him in appearance and custom. The Mon-Khmer people who migrated in Deccan with buffalo culture were known as Mahishā-Asura Sambu (Sambara = Cimbrii). They still form the backbone of the middle class population. Their power was overthrown by the victorious Turvasus (Mediterraneans). They are usually medium statured with dark-brown complexion. They are dolichocephals and have high cranial vault, narrow vertical forehead with faintly marked supra-orbital ridges. They have elongated broad face. Their nose is long and prominent; but nasal bridge is not very high and nostrils are somewhat spread out. Nairs with their matriarchal law of inheritance (sambandhan) seem to be western thrust of this racial

migratory movement, and the Mon-khmer speaking Kasia the eastern limit remaining as a distinct unit in India. The *Taravad* of the Nayar's matrilineal joint family in which the man, his sister, the children of these sisters and the children of their daughters hold the property in common resembles the *Taviti* (the names are also similar) ownership of the Solomon Islands. But in the Nayar woman's non-fraternal polyadry of group marriage Nambudiri Brahmins (except the oldest sons who are only allowed to marry among their own class) who resemble the Todas in appearance are allowed to consort with Nair women. But the children of these unions remain with the mother and are Nairs. Kurubas of Nilgiri and Kammalas of Malabar also practise fraternal polyandry. The Khasis have a large mixture of Mongoloid in them. They are of medium stature, mesaticephalic head, light-yellow complexion and medium nose. They not only speak a Mon-Khmer language, many words of Mon-Khmer derivatives have even entered into Sanskrit vocabulary. *Nārikela*, from Malay, Sakai and Semang *nigor*=cocoanut and *Tareng Kolai*=fruit. *Kapola* (ckeek) from Sakai *Kapan* (face); Bengali *Kapāla*=forehead. *Karkata*=Malay *Katām*=crab. *Bheka*=Malay *buak*=frog. *Janghā*=Mon. Khmer *Jong*=Santali *Jangga*=foot. *Jaluka*=Semang *Jelo*=Khmer *Jhlong*=leech. *Sarsapa*=Malay *Sesawi*=mustard. *Tandula*=Sakai *cendaroi* (cooked rice)=husked rice. *Ghantā*=Malay *geudang*=Sakai *gentang* (a kind of drum)=bell. *Gaja*=Semang *gaja*=Tembi *Gajah*=elephant. *Kapota*=Semang *kawod*=pigeon. *Kāka*=Khmer *kaek*=Mon *Khadak*=crow. *Halāhala* (poison) from Semang *hale*=cobra. *Kadali*=Sakei *Keluwi*=Semang *Cedah*=Palaung *Kloai*=banana. *Bāla*=Malay *bulu*=Cambodian *balau*=Batak *balu*=hair. *Kambala*=pressed hair=blanket. *Sālmali*=Pali *Simbali*=fine hair of Bombax *heptaphyllum*. *Langala*=plow and penis (linga); *langula*=bent stick, tail and penis; *linga*=penis. *Langala*=Malay *Tangala*=Tembi *tengala*=Batak *tingala*=Khmer *ankal*=Cambodian *lanan*=Khasi *Ka-lynkor*. In Rv. cane (*vaitasena*) has been vulgarly used as penis (x, 5, 5). *Mayura*=Tamil *mayil*=Canarese *maylu*=Santali *marak*=Mon *mrak*=pea-cock. *Phalam*=Tamil *palam*=Khmer *phle*=fruit. Dravidian words *Matachi* (locust), *Markata* (monkey), *Khatta*

(cot), Kukkura (dog), Keyura (bracelet), Mina (fish), Nira (*water*), have entered into Sanskrit; khokā (son), talu (scalp), nola (tongue), meye (daughter), pilley (polā = child), jhagrā (fighting) have entered into Bengali. Khasis use shouldered iron hoes, double bladed iron sword and erect dolmens and table stones on their dead. Polyandry was practised in olden times which is replaced now with a loose kind of marriage and easy divorce, and the husband lives in the house of the wife. Property passes by the female line and is always inherited by the youngest daughter, reminiscent of matriarchy. Remnants of human sacrifice and snake worship survive in the cult of Thlen, the phantom serpent whose cult is hereditary in certain families and requires the offering of a human life. Human victims were also regularly sacrificed in the Synteng kingdom of Jaintia and these sacrifices were accompanied by ceremonial cannibalism. Khāsi name might have been derived from the Caspian Kassite element in its Mon-Khmer components. The unmixed Caspian Kassites are called in the Himalayas as Khos of Chitral, Khasas of the Dehradun and Simla Hill states and Khosa as a Baloch tribe and a Jat tribe. Nairs (Newar) are a tall dolichocephalic people with narrow nose and brownish complexion. They practise matriarchal polyandry. Sister's son inherits the property as among the Nubians who are also a blend of the Caspians and Australoids. MONGOLOIDS as a dominant factor are not found in India proper except in Assam, sub-Himalayan regions (Gurkhas) and in Afghanistan (Hazara) extending from Kabul and Ghazni to Herat and from Kandahar to Balk, introduced by the Mongol invasion of Jenghis Khan. In the *Purānas* the Mongoloids were known as *Hiranya Kasipu* (Yellow Man: Golden Horde). Later it was known as *Daitya* and *Kirata*. Pralhāda was a Daitya chief. There is still a *Datye* agricultural clan in Amritsar, but it has lost all its original imports. The Kiratas of golden complexion lived on the northern border of Magadha. They are known in West Nepal as Kirāti in Nepalese history. They are now represented by Gurkhas who are a mixture of Mongoloid, Palae Alpine and Australoid. Lepchas of Sikkim, Bhotias of Bhutan are a mixture of the Mongoloid,

Palae-Alpine, Caspians. Many of them are very tall with heavy bony frame and long fine nose. They practise fraternal polyandry, and sexual morals are very loose among them. These people generally use a bent stick as a plow to dig into the earth. Langala therefore means a stick which is pushed into the earth or the vagina; Langala is a hairy penis or tail. Linga is a contracted form of langala and langula. *La* in Santali means digging a hole in the earth, and *loc* = Malay *lak* = Khasi *l-loh* = penis. Linga (penis) is cognate with *loc*. Even Gurung is a mixed people. The Dafia, Miri, Abor, Mismi, Gāro, Manipuri, Koche are dominantly Mongoloid with a slight mixture of the Caspian. But some Abors and Mishmis are tall, have medium nose and long beards. The Galong clan of the Abors practise polyandry and levirate. But Abor woman lacks modesty, and chastity is not an Abor virtue. Comely Mishmis whether married or unmarried are not different from their Abor sisters. Polygyny prevails, and the number of a man's wives is the test of his wealth and influence. A Mishmi son always succeeds to the use of his father's widows, his own mother only going over to the next of kin among the males. Abors, Galons and Mishmi eat up their old parents like Massa Getae. They sacrifice their captives before their war god *Piang*. The Garos possibly migrated from Bhutan and belongs to the Boro (ancient) group and is related to Tipperas Kacharis and Koches. Marriage is exogamous. But the marriage proposal comes from the woman, who being accepted lives on bridegroom's house on probation. And if the husband does not prove satisfactory to her she leaves him. Man in love-making can make no advances, till a female encourages him. She has the initiative in marriage and she is the dominant partner; she helps her husband in cultivating the fields. She is robust, healthy and cheerful. But this system is subject to compulsory cross-cousin marriage, coupled with the rule by which the man must marry his wife's father's widow who happens to be his own aunt—father's sister. In that case she rules the household, dominating over her own daughter who was married to the same husband before her. A man's sister's son—called his *Mokrom*—is his nearest relative as the husband of one of his daughters and ultimately

of his widow and the inheritor of his and his wife's property. Their implements of husbandary are a hoe and a battle axe which is used for all purposes and no Garo is ever seen without an axe. The Garos eat all kinds of food, including cats, dogs, frogs and snakes. They rear kine, goats, swine, fowls and ducks. Like the Nāgās, Kashis, they abhor milk. Their favourite food is roasted puppy. They used to make human sacrifices before their ancestors. The Purānic episode of Garura killing the Nāgas is based on the historical facts of the conquest of the Nagas (mixed Mongoloids and Negritos) by Garos (Mongoloids mixed slightly with the Caspians). Koch belongs to the Boro group and originally spoke the cognate language. Koch, mixed to a greater extent with the Australoid, is akin to the Mech, Tippera, Garo and Kachari. Koches in Cooch Bihar have adopted Hindu manners and customs. But the cultivation among the Koches is mainly with the hoe. When a Koch marries he goes to live with his wife's mother and under her guidance. When a woman dies, the property is divided among her daughters. Widow marriage is common. Lepcha of Sikkim is dominantly Mongoloid with a tinge of the Caspian. The Lepchas practice fraternal polyandry and polygyny, the brothers jointly marrying all the daughters of a man. Marriage is by service coupled with a small payment. But where the brothers are not in a position to marry all the sisters, a man may cohabit with the younger sisters of his wife. The eldest brother's wife is common to all the brothers, only the youngest having his wife to himself. Incest is punished with excommunication. But chastity before marriage in an adult girl is neither met with nor cared for. However after marriage she is usually faithful. But marriage is often allowed on credit and is breakable if the payment bargained for is not made within specified time. The Lepchas are jolly, cheerful and honest. Theft is almost uncommon among them. Among the Dhangars and Dombs marriage is permitted with mother's sisters children which is only prevalent among the Mongoloids.

Ikshvāku Dasaratha (1462 B. C.) of Ayodhyā had three wives—(Kosalyā, Kosala princess; northern part of Ayodhyā was occupied by Kāsa—Kassite), Kekayi (Kekaya princess),

and Sumitrā. Rāma Chandra was born of Kosalyā, and naturally the heir-apparent, being the eldest son. Bharata was born of Kekayi, and Satrugna was born of Sumitrā, possibly a kinswoman. It seems that the heir-apparent Rāma-Chandra's banishment was due to the Kekaya pressure and influence in the Ayodhyā palace. It is said that Dasaratha fought against Timidhaja Sambaras in alliance with Rājarshi (Atrithigva Divodasa: Vāyu P. 99, 200) in Vaijayanta near Dandaka forest. Here Ikshvakus were worsted by the Sambaras. Dasaratha received several wounds on his body and fell unconscious in his chariot which was driven by his wife Kekayi who by her dexterous driving saved her husband's life for which she was promised two gifts by her husband (Ram. 2, 9, 11-18). Kekayi demanded possibly backed by her powerful kinsmen who ruled in the Punjab that her son Bharata be made the crown prince, instead of Rāma, son of Kosalyā (Kassite princes). Kekayas are the Iranian 12th dynasty *Kaikawas*. Possibly Ikshvakus were harassed. Not only Kekayas were intriguing, Parthavas in alliance with Daci Srinjayas (1450 1450 B.C.) were defeating the Alpine Vrijnivānts and Mediterranean Turvasus on the rivers Hariupa (Hariob) and Yavyavati (Zob). Pulastas under Dasagriva Kubera Rāvana were also perhaps threatening from the Godāvari side. Rāma with the help of Nishāda (Negrito) Guhaka and Bānara (forest-dweller = Veddhā) Sugriva rescued his wife Sitā who was abducted by Rāvana, and defeated the Caspians. After his victorious conquest Rāma occupied the Ayodhyā throne, and Bharata as a protegee of the Kekayas ruled in Sindhu which was at that time under the possession of the Kekayas. Possibly around this historical kernel of the Aryan conquest over the Dānavas (called also Rākshasas), the Rāmāyanic myths have been elaborated. Kuru Rithisena had three sons—Devapi, Santanu, *Vahlika*. Because of skin disease, Devapi could not be the king, and Santanu ascended the throne. But as there was drought and famine, Devapi officiated as Santanu's priest for rain and on that occasion composed the hymn (x, 98). Santanu had by his wife Jāhnavi an energetic son Devavrata Bhishma. But as Dvimiras under Ugrāudha were becoming an aggressive power by conquering North and South Pancālas, Santanu in order to

safeguard his throne thought it prudent to make an alliance with the neighbouring Matsya kingdom and married the Matsya princess Satyavati on condition that her children would inherit the Kuru kingdom, setting aside the claims of popular heir apparent Devavrata Bhishma. Santanu by Satyavati had two sons—Vicitravirya and Citrangada. Satyavati had also a maidenhood son Krishna Dvaipāyana Vyāsa by Parāśara Vasishtha. Soon after Santanu's death Kuru kingdom was attacked by Dvimiras, but the Dvimiras were not only routed, South Pancāla was absorbed by the Kauravas, and North Pancāla formed a new kingdom by Prishata, an old North Pancāla Daci scion. Citrangada was killed in his youth by Gardavabhills. Vicitra-virya was married to Kāsi princesses Ambikā and Ambālikā who were abducted by Bhishma for his step-brother. Vicitra-virya died soon after his marriage without leaving any issue. So Satyavati appointed her maidenhood son Vyāsa to raise issues of Vicitravirja through his widows to preserve the royal line as Bhishma had refused to perform the levirate, or perhaps Satyavati thought Dvaipāyana was more intimately related to her than Bhishma. Vyāsa begat with Ambikā Dhritarāstra, and with Ambālikā Pāndu. As Dhritarāstra was born blind, Pāndu became the king. But as the Pāndu had been suffering from blood-pressure, he retired from royal activities and lived a quiet life in the forest; or more probably there was a succession contest, and both of them got the Kuru throne as the party intrigues and turn of fortune favoured them. Pāndu had married Yādavi (Alpine) Kunti or Prithā, sister of Bāsudeva, and Mādri, the princess of Madra who with the Kekayas conquering the Anava kingdom Sibi, had settled between the Ravi and Chenab having their capital at Sākala (Sialkot). Salya was its ruler at this time (Udyoga ch. 8). Asvapati, father of Sāvitrī of Satyavāna episode, was also a Madra (Matsya P. ch. 20⁶; MBh. Vana P. ch. 296). Asvapati was the title of the kings of Madra (Manda) Cimmerians as Janaka of Videha kings. Madra was a part of Bahika (MBh. Karna P. ch 45). Pāndu was childless and he was advised to desist from sexual intercourse. So he consented to have his wives having children with any one they pleased; or both Kunti and Mādri had the sexual privilege and freedom anyway. And the later bards have this consent inter-

polated to legalize the children so that the custom does not appear revolting to the listeners. Both the Alpines and particularly the Manda Caspians enjoyed sexual freedom. Kunti had a maidenhood son—Karna. Thus Kunti became the mother of Judhisthira, Bhima and Arjuna; and Mādrī became the mother of Nakula and Sahadeva. These are known as Pāṇḍavas. Whether the Pandavas are an allied Kuru or Krivi victorious invading tribe and to make the conquering horde popular in the public imagination, they were made victimized objects of sympathy and grafted on the Kaurava stem, or they were the real successor to the Kaurava throne and fortune played tricks with them is a debatable question. They practised fraternal polyandry by jointly marrying Draupadi which Judhisthira claimed to be his family custom. No doubt Kāmboja Kuru was (MBh 1, 195) a Caspian tribe, and fraternal polyandry was customary among them. After Pandu's death Pāṇḍava orphans are made to appear in Dhritarāstra's court at Hastināpura. Dhritarāstra married Gāndhārī (Semite), daughter of Gāndhara king Suvala and they had a number of children, headed by Duryodhana. Though the legitimacy of the Pāṇḍavas was questioned, they were brought up and trained in military arts, particularly in archery with Duryodhana brothers by Dronā, and Kripācharyas. Kauravas attacked Pāṇḍavas. Drupada, son of Prishata, was defeated. But truce was made by compelling Drupada to cede North Pāṇḍala to the Kauravas, and Dronācharya was made its viceroy. For mutual aid and support Drupada of Pāṇḍala was forced to give his daughter Draupadi in marriage to Pandavas in a polyandrous fashion after the Pracetas (Caspians). With the North Pāṇḍala and the Yādava support under the influence of Krishna, its chief Consul, the Pāṇḍavas secured from the Kauravas, south-western part of the Kaurava kingdom—the Khāṇḍavaprastha (extending up to Khandwa) with Indraprastha (Delhi) its capital. A splendid palace was built by Maya Danavas and Takshakas who escaped from the Khāṇḍava forest conflagration for the Pāṇḍavas at Indraprastha. But due either to court intrigues at Hastināpura or due to a defeat inflicted by the Kauravas the Pāṇḍavas were driven out for 12 years.

The Yādava (Alpine) system of government was different from that of the Ikshvakus (Aryan), Kurus and of Mlecchas

(Molossi : Bhagadatta of Prāg-jyotisha). It was a confederation of several independent clans, the most important of which were the Bhojas, Andhakas, Vrishnis and Kukurus. Each clan was ruled by its hereditary chief, but the administration of the entire confederation was vested in the assembly of the chiefs (*Sanga Mukhyas*), whose decision by majority of votes was conveyed to the public by its president (*Sabba* P. ch. 210) by beat of drums. Devaki-putra Vasudeva Krishna was the Sanga-Mukhya of the Vrishnis. Kamsa of Mathurā was the president (*Sabha-pati*) of the Yādava confederation. Kamsa married two daughters—Asti and Prāpti—of Jarāsanda (of Kuru Brihadratha) descent of Magadha. Jarāsanda aspired for imperial power. He imprisoned his feudatory chiefs and centralized his government. He became powerful by making alliances with Mleccha king Bhagadatta of Kāmarupa, Pundra Vāsudeva (Caspian) of Vanga, Danta Vakra of Karusa and Sisupāla (Alpine) of Chedi. Emboldened by this alliance and support and the example of his father-in-law, Kamsa imprisoned his father Ugrasena and became the chief of the Andhakas. And thus becoming the president of the whole confederation, he began to rule it in an arbitrary and imperialistic way, quite unlike the Alpine democratic method of mutual advice and consultation. To avenge this wrong, Krishna treacherously killed Kamsa, and elected Ugrasena as the president of the Bhoja, Vrishni and Andhaka confederacy. At this Jarasandha attacked Mathurā with his allies : Dantavakra of Karusa (Rewa), Chedi king Sisupāla ; Pundra Vāsudeva of Paundra, Vanga and Kalinga ; Kaisika (Kassite) Sankriti ; Vismaka Rukmi of Vidarba (Alpine) ; kings of Kosala (Kassite), Kāsi (Kassite), Videha (Bessi), Madra (Manda Cimmerii), Trigarta (the land watered by three rivers—Ravi, Bias and Sutlej) = Jalandhāra : Kassite), Darada (Dardistan, north of Kashmir ; Udayana : Dards = Alpines), Sindhu (Caspian), Sibi (Palae-Alpines, occupied by Caspians) ; Suvala of Gāndhara (Semite), Gonardha (Caspian) of Kāshmir, and Kaurava Duryodhana. Finding it hard to defend Mathura against the allied armies of Jarasandha, the Sangha Mukhyas at the advice of Vāsudeva Krishna removed their headquarters at Dvarāvati in the Raivataka Hills (Girnar). And they enlarged, fortified and beautified it (*Harivamsa*, ch. 90, 113, 115). The Yādavas then hatched a conspiracy with the

Pāṇḍavas and Ikshvākus under the instigation of Krishna to curb down the arrogance of Jarasandha's might. And Krishna with the aid of Bhima and Arjuna treacherously killed Jarasandha and put his son Sahadeva on the throne. Pāṇḍavas defeated the Kauravas in the Kurukshetra war about 10:8 B.C. and became the paramount power. The Pāṇḍavas got as their allies Matsya (Mediterraneans), Kekaya (Caspian), Kāsi (Kassite), Vrishni and Chedi (Alpine). Somakas (Daci-Caspian of Pāncāla under the leadership of hermaphrodite Sikandi), of Sahadeva of Magadha, Ghatotkocho (Pani) of Cachar. The Kauravas were aided by Madra (Saka Murunda=Saka Svāmin), Caspians of Trigarta (Jallandar), Sindhu and Camboja. Karkota Nāgas (Caspians) of Mahismati under the leadership of Nila, and Anga Palae-Alpine under the leadership of Karna, Mleccha of Prāgyotisha under the leadership of Bhagadatta, Semites of Gāndhāra under the leadership of Sakuni, and Negro or Caspian Alam-bhusha. Nārada and his nephew Parvata, descendants of Kanva Medhatithi, instructed the substitute of Soma drink to Sahadeva, son of Jarasandha of Magadha, Somakas of North Pancala Dynasty, Babhru Daivavridha, Bhima Vaidarbha, and Nagnajit Gāndhāra (Ait Br. 7, 34, 9). Nagnajit Suvala of Gāndhāra, a disciple of Prahlāda (Parvata), had a son Sakuni, daughter Gāndhārī (married to Dhritarāstra) and Asura Isupa=Nagnajit (MBh. 1. 67). Suvala Nagnajit joined Jarasandha against Krishna (Vishnu P. 34), and Krishna married his daughter Satyā Nagnajit (Vishnu P. ch. 60). Sakuni joined Kurus against Pāṇḍavas. Nārada was a great friend and counselor of Yādava Krishna. Parikshit, son of Pāṇḍava Abhimānyu and Matsya princess Uttarā got the advantage of the decisive Pāṇḍava victory over the Kurus. Parikshit (Av. 20, 127, 7; Ait Br. 7, 21) became a mighty sovereign. He married a Madra (Cimmeri) princess Madravati, ruled over an extensive kingdom from the Sarasvati to the junction of Ganges and the Gandak, for 24 years, but was assassinated by Takshakas (Tajiks) at the age of 60 (MBh. 1. 49, 17, 26). Parikshit was succeeded by his son Janamejaya who waged war against the Takshakas, was a great conqueror (Ait Br. 8, 21), occupied Takshasilā (Taxila) and aspired to be an emperor (Sarvabhauma: Ait Br. 8, 11). Janamejaya had as his priest ministers Indrota Daivapi Saunaka and Tura Kavashya

(Mediterranean). But he antagonized the Kāśyapas who forced him to abdicate his throne in favour of his son Satanika. Satanika's son was Asvamedhadatta. His son was Adhisima-Krishna. His son was Nicakshu during whose reign Hastināpur was washed away by the Ganges and he removed his capital to Kausambi. It is more likely that foreign aggression in the North forced Nicakshu to remove his capital to the South. And also it is possible that the kingdom was split up into two through succession feuds, and the seceders established their capital at Kausambi. Abhipratatin Kakshaseni is mentioned as a Kuru king with Driti Aindrota, son of Indrota Daivapa Saunaka as his priest (Ch. Up). Kakshasena was a brother of Janamejaya (MBh. 1, 94, 54). There was also a famine in Pancāla due to the devastation of crop by enemies (Mataci), possibly Kekayas, which forced Ushati Cakrayana, Svetaketu and his brother-in-law Kahoda, his nephew Astavakra to migrate, and they with Yājñavalkya frequented the courts of Janakas who became powerful and generous patrons of learning. It is said that Māthava Videgha (Mithi Videha) introduced fire worship, the Aryan custom, through the priest Gotama Rahugana of Sarasvati along the river Sadanira (the Gandak or Rapti) which formed the boundary between Kosala and Videha (Tirhut). But the Maithili power did not last more than a century. In the seventh century B.C. Northern India was invaded by the Caspian hordes and conquered territories up to the Gangetic plains.

The Caspians that settled in India were of different clans. Kambojas settled in Kamboja (Upamanyus are mentioned in Rv. 1, 102, 9. Kamboja Upamanyava is one of the teachers of Vamśa Br. Kambojas of Rājapuram (MBh. 7, 4, 5) lay to the southwest of Punach; Cambysis (Iran Kambujiya) was the ancestor and son of Cyrus (Iran. Pur. Kuru); Kekayas and Madras in the Punjab; Śākyas in Kapilavastu; and Kolis in the Sub-Himalayan region; Khasas in the Sub-Himalayas and in Kosala; Maur Guptas (Moor Copts) in Swat (Sasi Gupta), in Pippalivana (Moryas) and in Magadha (Maurya Gupta); Sisunāgs (Sesunaks of Susia; Sces of Sogdiana; some clans of the Sakas used the title of Nāgas); Malla in the valley of the lower Ravi (Malloi of Alexander's time), in Mālava which has been named after them, and of

Kusinagara at the junction of the Gandak and the Rāpti (Mallas; Muli of Caspian type, tall, fair complexioned dolichocephal with broad elongated face, is found in Chinese Tibetan region—Szechwan: N. G. M. Oct. 1938); and Vajji (Licchavi—Nicchavi of Kullika Bhatta, commentator of Manu. Nisibis settled in Mesopotamia and Iran after whom Nisobis towns were made in them); Kathi (Kathaioi of Alexander Krātha of MBh. 8, 85, 16) between the Jhelam and the Chinab with Sangala in Gurudaspur as their capital; (Katha of the Yajur Vedic Kathaka Sākhā and of Katha Up-nishad; Germanic Catti of Tacitus); Bhagga (Bhargas: Ait Br. 8, 2, 8) of Samsumāra Hill; Bulis of Allakappa; Kālā-mas (Kālāma Alāra) of Kesaputta (Kesins: Sat. Br. 6, 61).

Sisunagās (Susinak of Susiana; Sces of Sogdiana—Ses-nags) occupied Magadha. Māgadha itself is Saka name for warriors; Maga (var. Mriga: Gk. Magos; Eng. Magi. priest of the Zoroastrians) is the priest, Māgadha is the warrior, and Manasa is the labourer, without any distinction of Caste, all worshipping the sun (Mihir) in Scythia (Saka dvipa: Vishnu P. 2, 4, 64-71). Bimbisāra was a great king of the Sisunags, fifth in descent. Senika Bimbisara (528-509 B. C.) was contemporaneous with the Sākyasimha Gautama, the Buddha (550-478 B. C.) of Kapilavastu and Gnātrika Jina Vardhamāna Mahāvira of Vaisāli. Bimbisāra kept contact and friendly relationship with his allied kinsmen all over the country. He married the sister of Prasenjit of Kosalā and got the province of Kāsi as dowry. It seems that Kāsi was under the domination of Kosalā, and if Kāsas were still in power they were as feudatory chiefs. Bimbisara married Khemā—a Madra princess. Khemā became Buddhist nun and taught Presenjit. Bimbisāra also married Cellanā, daughter of the arohon Chetaka of Vaisali and the son of this union was Ajātasatru. Trisulā, sister of Chetaka was married to Sidhārtha of the Gnātri clan of Kāśyapa gotra of Kundapura. and their son the famous Jina Vardhamāna Mahāvira. Bimbisāra received an embassy from Pukkusāti, Kāmboja ruler. When Bimbisara heard that his friend Mahāsena Canda Pradyota of Avanti was suffering from jaundice, he sent his distinguished physician Jivaka to cure him. When Gautama

Buddha came to Rajagriha, Bimbisara welcomed him as his kinsman. Kunika Ajātasatru (500—474 B. C.) usurped the Magadha throne by imprisoning his father Bimbisara. At this Prasenjit took back the Kāsi province, he gave to his sister as her bath and perfume money. Then Ajātasatru invaded Kosalā, and Prasenjit was compelled to make a seemingly honorable truce with Ajatasatru by giving his daughter Vajirā in marriage to him and to cede the same Kāsi territory, ostensibly for which war was declared as a dowery for his daughter. Thus Ajātasatru is known in the Upanishads as the king of Kāsi. Possibly he also acted as viceroy of Kāsi during his father's life time. Ajātsatru made also war against Vaisali and absorbed it in his Magadhan Kāsi empire, after a hard struggle for 18 years. It is said that Seniya Bimbisara gave a necklace of 18 strings of jewells and an elephant Seyanaga (Secanaka) to his younger son Halla, born of his wife Chellanā, the daughter of Cetāka, chief of Vaisali confederacy. At the wish of his wife Paumāvai, (Padmāvati, daughter of Chetaka) Ajātasatru demanded from his brother Halla the return of these gifts. Halla took refuse with his grand-father Chetaka who refused to surrender him. At this Ajātasatru waged war against the Vaisali confederacy and aborbed it after a hard struggle for 18 years. Bimbisara patronized Buddhism while Ajātasatru in the beginning antagonized Buddhism and as a state policy favoured the Sanga organization of his maternal uncle Jina Mahāvira. But after his antagonism with Vaisali, he befriended Buddhism. Prasenjit of Kosala married a Sākya maiden Vāsavadattā of Kapilavastu. Their son was Virudabha. Virudaka in conspiracy with the commander-in-chief Digha Cārayana usurped his father's throne, and he made war on Kapilavastu to avenge an insult; and killed about 70,000 Sakyas out of a population of about 800,000. Mahāsena Canda Pradyota founded the Mahākāla temple of Avanti. He treacherously imprisoned the Kuru scion Udayana of Vatsa (Kausāmbi). Udayana was a fine youth. Pradyota's daughter Vāsavadattā was a comely intelligent maiden. They fell madly in love with each other. With Vāsavadattā's help Udayana managed to escape and they were married. Pradyota was succeeded by his son Palaka.

Palaka was assassinated by the infuriated mob of Ujjaini about 477 B. C. Udayana claimed succession through the right of his wife—Vasavadatta—and he got Avanti. Ajātasatru was succeeded by his son Darsaka. Darsaka was dethroned by a revolution in 477 B. C. Udayana managed to marry Padmāvati, sister of Darsaka. And he perhaps through court intrigues fostered revolution and secured Magadha throne. Thereby consolidating Avanti, Vatsya and Magadha, he became the paramount power. Udayana (Kāma Asoka=Kāla Asoka) in the fourth year after his acquisition of Māgadha built Kusumapura (Pataliputra), and made it the Capital of his consolidated vast kingdom. And by marrying Priyadarsikā, daughter of king Dridhavarman of Anga, he also incorporated Anga within his empire. The Kuru Udayana dynasty, was overthrown by the terrible invasion of the Sudras (Chudes) under the leadership of Nandivardhana and Mahanandin. Mahāpadma Nanda is said to have brought all India, particularly its northern parts under his sole sway, uprooting all the ruling powers (sarva Kshatrantaka) and became the sole monarch. Pānini was his friend (AMM 439). Kathā Sarit Sāgara mentions the camp of Nanda Rājā in Ayodhyā. The Hathigumpha inscription mentions Nandarāja in connection with an aqueduct of Kalinga and he carried as trophies the statue of the first Jina and other souvenirs and treasures of the Kalinga kings to Magadha. The Nandas in the south at least conquered up to the Godāvāri, for on it is found a town—Nan Nand Dehra (Nander). Several Mysore inscriptions state that Kuntala (North Mysore) was ruled by the Nandas. The Greek historians tell us that beyond the Beas there was a powerful Gandaritai (Gangetic) king Agrammes (Agrasainya, successor of Mahāpadma Ugrasena) had 20,000 cavalry, 200,000 infantry, 2000 four-horsed chariots and 3000 elephants, and Alexander's army officers were afraid to try strength with him. The Macedonians were mostly Caspians. There was but slight Aryan elements in them; but in the imperial army there were large contingents of Ionian soldiers. After Alexander's death Macedonian Seleukites fought against the Ionian Demetrius for supremacy and in mutual antagonism, rivalry and slaughter, Macedonian empire vanished. Persis

also served in the Macedonian army. According to Strabo Cyrus led an expedition against India through Gedrosia (Kadru) but met with failure. But according to Pliny Cyrus destroyed the city of Kāpisa (Chinese Kipin, on the Kabul; Kāpisi of Pānini). Arrian mentions that the region west of the Indus as far as the Cophen (the Kabul) is inhabited by Astaceni = Asmaka = Asii tribes = Yuechi. Asvakas had in their coins of 300 B. C. fig tree (vata), hill, svastika symbols. They paid tribute to Cyrus, son of Cambyzes as ruler of their land. In the Behistan inscription of Darayavush (Darius : 522—486 B. C.) Gadāra (Gāndhāra) is mentioned as a subject people. Indus (Sindhu), the 20th satrapy of the Achaemenian empire, paid a tribute of ivory and yakā wood; Gandhāra was in the seventh satrapy. It seems that the Achæmenides held the Indus basin up to their overthrow by the Macedonians, and Alexander's conquest in India did not extend much further than the Persian possessions. At Taxila a Persian inscription in Aramic of fifth century B. C. has been found. When Alexander came to Northern India, it was divided among various disunited tribes in antagonism with each other. Sambos (Sumbha = Mon-khmer = Sambara = Sabara = Cimbri) were fighting Mousikanos (Muchukarna). To avenge tribal jealousies, Alexander's army was welcomed by Ambhi (Ambhasthas ?) of Taxila, Sangaeus (Srinjivas ?) of Pushkaravati (Peshwar), Assagetes (Massa-Getae) and Sisikottos (Sasi Gupta = Maur = Moor Copts) of the Malakand. Alexander met with fierce resistance from Assakenians (Asmakas = Asii). Porus (Purus), Malloi (Malla; Muli of Szechwan; Mala, Malaya Malava of Multan), Kathians (Kathi), Oxydrakai (Kshudraka), and Mousi-kanos, Sibo (Sibi), Abastanoi (Ambastha). Massaga, the stronghold of the Assakenians (Tocharian Asii) was stormed with difficulty, and when the defenders were treacherously massacred, women, according to Diodorus, taking the arms of the fallen fought heroically side by side with men. The Assakenian had an army of 20,000 cavalry, 30,000 infantry and 30 elephants, but when defeated, they were given over as a reward of betrayal service by the invaders to Sasi Guptas. From Asvaka (Bajaur) Alexander's swollen army entered into Ujjanaka (Swat), the Maurya kingdom of Chandragupta. Here resistance was

stubborn as in Asvaka, and Alexander received a wound in ankle. The Porus (Purus) on the banks of Hydaspes (Jhellum) had resisted the invaders. But Alexander built some wooden horses, filled them with gun powder which exploding brought confusion and routs among the elephants and army of Porus. The Siboi (Sibi) submitted without much resistance. But the neighbouring Agalassoi resisted and were defeated with great slaughter. Malloi (Malla), Oxydrakai (Kshudrakas) and Abastonoï (Ambashthas) dwelling along the Ravi and Beas, Kathawi (Kathi; Catti of Tacitus as a Teutonic tribe) and Sodrai (Sudras) by Northern Sind gave stubborn opposition, but being disunited could not offer any effective resistance against experienced well-disciplined army of Alexander. When Alexander entered into the territory of the Kathis and besieged their capital Sangala (Gurudaspur) on the Beas, Alexander heard that there was a revolt in Asvaka (Yuechi = Tocharian = Asii, a blue-eyed tall people in the frescoes of Turfan) and Ujjanaka, and the Macedonian general Philepus was assassinated by the rebels. But finding Chandragupta under the guidance of the astute diplomat and organizer Vishnugupta of Canaka (hence also called Cānakya after his birth place, and also Kutalya after his Gothra Kutala) was assembling a large army of the rebellious Sakas, Yavanas (possibly some discontented deserted Ionian soldiers), Kambhojas, Kiratas, (a Mongaloid tribe, Parsikas (Persians) and Bahlikas (M. R. 2, 12), and killed Satrap Nikator, blocked the way in the rear and was even joined by Porus (Parvata), Alexander was forced to return to Susa by way of the Indus. The combined army of Maurya (Gk. Morieis) Guptas (Moor Copts: Ancient Egyptians called the Copts, Gabt and Gopta, Gk. ai-Guptions) cleared northern India of Macedonian and allied forces. Maurya Guptas were opposed by a coalition of 5 kings, Citravarma of Kulutas (Kulus), Simhanāda or Malayaketu of Malaya (Mallas), Pushkaraksha of Kashmir, Sindusena of Sindhu, and Meghakhaya of Parikas (Parsis). Malla army included Khasas, Māgadhad (of Bactriana), Gandhāras, Yavanas, Sakas, Chedis and Huns (M. R. 5, 22). Then the Maurya and allied army fell upon the tottering Sudra (Chudes) Nanda empire, enfeebled by internecine wars, and the Nandas collapsed. The Nandas

had absorbed the Vaisali oligarchy of the Lichchavis and Moriyas of Pippalivana. The Moriyas were the kinsmen of the Maurya Guptas. The Moriyas and the allied clans joined the invaders and facilitated the overthrow of the Nandas. Through the machination of Cānākya, after Alexander's early death, Eudemos was encouraged to declare himself the King and to feel jealous and suspicious of Porus (Parvataka of Mudrārākshasa) and who therefore murdered him (Diodorus 14, 5). Thus with the coronation of Candragupta (322—298 B. C.) the Maurya Guptas were the masters of northern, western and eastern India. Between 312—302 B. C. Macedonian Seleucus, a general of Alexander, brought under his domination the territories up to the Indus and Jaxartes. In 302 B. C. Seleucus attacked the Punjab and the Sindhu. Seleucus was defeated and was forced to purchase peace for 500 elephants with Chandra Gupta by ceding him Afghanistan and Beluchistan with his daughter. Thus Mauryas became master of practically the whole of India. Māmulanār, an ancient Tamil poet, states that the Mauryas with a powerful army, including Kasar (Kasa or Khasa) whom they have left behind, penetrated as far as Podiyil Hill in the Tinnevely district. It included even Kathiwar, for in Saka Satrapa Rudradaman's Girnar inscription it is stated that Rudradaman rebuilt the dams of Sudarsana Lake, made by Chandra-Gupta Maurya. At Pataliputra pottery with Parsa fire-altar emblazoned on it has been found of Maurya times. A large number of Sāka-dvīpi (Magā=Magi) Brahmins and Babans are found in Bihar. Baban is a Kurdish (Gadhi) clan (14 E. B. Kurdistan). Maurya palaces resemble the Persepolis complex. In the Maurya period for the first time we find stone sculptures with highly polished surface. The round highly polished monolithic Chunar sandstone Asoke lotus bell edict pillars with elaborate lion and bull capitals are marvels of art and betray foreign imports with historic past as Egypt, not Persepolis. After the domination about a century and a half the Mauryas (325—185 B. C.) were overthrown by the Yuechi (Tajik=Takshaka) Sungas. (c/ Sung Dynasty of China) under the leadership of Pushyāmītra who was the commander-in-chief of the last Maurya emperor

and by killing whom Pushyamitra occupied the throne. Pushyamitras were a Kushan (Tocharian) tribe. The Sanskritized Pushya Mitra name betrays the worshippers of Tishya (Sirius) and Mithra (the winter solstitial sun). During Pushyamitra's time and before him during the reign of some weak Maurya kings Northern India was menaced by Bactrian Greeks. The grammarian Patanjali was a contemporary of Pushyamitra. He illustrates the present tense in his *Mahābhāṣya*—Iha Pushyamitram Yājñyamah—here we perform the sacrifices by Pushyamitra; Arunad Yavanah Saketam, arunad yavano Madhyamikam—the Yavanas have besieged Sāketa (Ayodhyā), and the Yavanas have besieged Madhyamikām (Chitor). It was possibly Menander, mentioned in *Milindapañha* as Milinda, a contemporary of Nāgarjuna, noted for learning and justice. His capital was Sākala (Sialkot) and his coins have been found over an wide territory, extending from Kabul to Mathurā, Sind to Barygaza (Broach). After victorious wars with the Maurya partisans in Vidarbha and with the Yavanas, Pushyamitra celebrated a horse sacrifice, in which the horse was captured by Yavanas under Menander, likely in the Avavallis, but was rescued by his grandson Vasumitra as mentioned in *Malavikāgnimitra*. Demetrius (Dattamitra) is called Yavana suzerain (Yavana-pati of Sauvira: Northern Sind: MBh. 1,139, 21-23) and in Arachosia known as Demetrius Polis Hellenic Euthydemide Ionian Demetrius was an ambitious military genius. He challenged the domination of the Seleukides. He became independent. He with his brother Apollodotus (Bhogadatta) and his general Menander crossed the Hindukush and the Indus about 183 B. C., occupied Taxila and made Pushkālavati (full of lotuses: near Peshwar) his capital where he made his second son Demetrius II the sub-king of Gāndhara. Demetrius conquered Sind (Pateline) and at Pātala built a port Dattamitri. There building a navy, Demetrius occupied Sarastos (Surāstra) and Sigeralis (Sagar dvipa=Cutch MBh. 2,31,66) and made Barygaza (Broach) its capital and left behind his brother Apollodotus its sub-king. His general Menander advancing through the Midland capturing Mathurā, Saketa (Ayodhyā), captured Kusumadvaja (Kusumapura) and scaling the 12 wide mad wall of Pataliputra occupied

it. But Menander was forced to abandon it as Demetrius was compelled (166-164 B. C.) to leave northern India for Bactria which was invaded by Macedonian Eucratides, and Menander had to protect Gāndhara (Yuga Purāna of Gargi Samhitā). But Khārvela in his Hattigumpha inscription boasts that being pressed by his army in Magadha Yavanarāja Dimita (a seal of Besnagar mentions Timitra as the name of Demetrius) went off Mathurā to relieve his generals. Dattamitra became popular with the Buddhists who called him Dhamma-mitta, for he patronised them, as they were being oppressed by Pushyamitras who destroyed many Buddhist stupas. Eucratides overran Bactria, killed Demetrius. Eucratides occupied Pushkalāvati. But Demetrius II son Demetrius with the assistance of the Parthian Mithradates killed Eucratides. As the Greek Euthydemus dynasty was destroyed, Menander assumed the role of a king, by marrying Agathocleia, a daughter of Demetrius. Though deprived of any help, he ruled for nearly 25 years from Mathurā to Gāndhara by his mixed army with power and pomp. Menander was succeeded by his son Strato I who had a long reign and who associated at the end with son Strato II. Menander called himself *soter*—savior of the Buddhists. The Yavanas cultivated friendly relations with the people. They adopted their manners and customs. Besnagar inscription states that Heliodorus, the son of Diya (Dion), a native of Taxila, came as an ambassador from the Mahārāja Amtalikta (Antialikidas), successor of Eucratide. Heliocles to Rājan Kāsiputra Bhāgabhadra, the protector (tratara), the fifth Sunga ruler of Vidisa who was prospering in the 14th year of his reign, and he erected a Garura-dvaja pillar in honour of Vasudeva about 90 B. C. Yavana = Gk. Iavon = Iouva of Darius — Heb. Javana (Yavana) = Hittite Yevanna = Bab. Iamanu. In Nasik cave inscription and Milandapāṇha Yonakas used. Though *Ionokos* was unknown in classical Greek, it existed in the current Hellenistic Greek of the east as for example the Inoka Polis of Ptolemy. After a reign of about 112 years (185-73 B. C.) the Sungas were partially overthrown by Kānvas (now represented by Kanbi, Kunbi or Kūrmi, an agricultural tribe of Northern and Western India). Kānvas were trusted military officers of the Sungas. But the last Sunga ruler

Devabhuti was a debauch, and in the midst of an amorous revelry, he was deprived of his life by a trusted slave girl of Vasudeva. The Kanva Vasudeva thus seized the empty throne. But Sunga authority was not entirely destroyed thereby. Andhras after destroying the Kānvas and the remains of the Sunga power became the paramount power of Magadhan empire about 28 B. C. Andras were a Saka tribe and acted as military officers of the Mauryas and were known as *Andra-bhrityas*. Shortly after Asoka's death, when there were succession feuds among the Kunala brothers, Kalinga's under Kshemaraja, grandfather of Kharavela and the Andhras under the leadership of Simuka threw off the suzerainty of the Mauryas between 240-230 B. C. In 170 B. C. Khārvela defied Simuka's son Satakarani, the protector of the west. The Andhra gradually stretched right across the Deccan from sea to sea. But Satakarani was checked in his advance by Khārvela of Cheta (Cheti, Chetti = Chedi?) dynasty about 188 B. C. Kharvela of Kalinga also attacked the Pushymitra territory of Magadha and fell upon the army of Menander when he attacked Magadha. Gautamiputra Satakarani (74-130 became a great emperor. His son Vāsishṭiputra Pulumāvi (78-148 A. D.) as a governor of the South made Salivāhana era in 78 A. D. in commemoration of his father's victory over Khakharatas in 78 A. D. and reconquering lost territories. Andhra power lasted till 435 A. D. with varying fortunes. One branch of the Andhra rulers was known as Satavāhana (Salivāhana). It is said that Nāgarjuna (140-44 B. C.) got gold out of rock (gold mining of Kollar) to replenish the treasury of Sātāvahana (Satakarani) depleted in building Amaravati stupa (Nagarjuni konda). Andhras, who were matrilineal in their succession as their name Gautamiputra indicates, were composed of five clans: (1) Sātavāhanas (Salivahanas); (2) Cutus; (3) Mudās; (4) Vilivayas (Baleokuros of Ptolemy: Vellore was their capital and Vālanatha—Vilinātha—was the name of their Siva image); (5) Abhiras (Vayu P. 99, 358). Salivāhana of Sisuka. (Scēs) Nāga descent, conquering Vikramāditya of Ujjaini and Kanva Susarman of Magadha became the emperor in 21 B. C. Vikramāditya, an Ephthalite = Pur. Betala—a mixed Huna Saka tribe, possibly affiliated with Yuechi-Tocharian) usurped the

vicerealty of his brother Bhartihari in conspiracy with his wife. Vikramaditya with the assistance of the Betalas (Ephthalètes : Gk. Abdei) declared independence of the Kanva suzerainty of Bhumimitra and made the Vikrama Era of 57 B.C. for his victorious achievements. Among the Sakas and Arattas sister's son inherited the kingdom and sister's husband (called brother) was the chief officer next to the king. Parthia (Khorasan) was occupied by the Caspian tribe Parthava (Parni), mentioned in the Vedas and inscriptions of Darius, and *Pehlevans* of the Zoroastrians. Parthia became a province of the Achaemenian and then of the Macedonian empire. But the Dahian Scyths under the leadership of Arsaces (Parni), taking advantage of the internecine wars between the Macedonian Eucratides and Hellenic Demetrius conquered Parthia and Hyrcania (Hiranya), became the ruling race about 240 B. C. They became known as Parthians. They adopted Zoroastrian religion. Parthian Mithradates I (170-138 B. C.) conquered eastern Iran, Media, invaded Babylonia, Taxila and occupied territories between the Hyaspes and the Indus. Antiochus III in order to consolidate his position against the Parthians renewed his alliance with Subhagasena (Sophagasenus) of the Kabul valley. Saka Manes (Mahārāja Moga) overthrowing the Greco-Bactrians occupied Kabul valley, western Punjab and the Indus. He issued the Samvat era in 58 B. C. He was overthrown by Azes, possibly as a viceroy of Suren Venones. Pehlevans, Ksharatas penetrated into the Deccan. Gondophares (Gudufara) ruled in Peshwar region about 47 A. D. and he brought St. Thomas from Palestine as a carpenter and was converted by him into Christianity. Phraates IV (37-2 A. D.) ruled in Gandhara, and Phraates Scion was a viceroy of Taxila and Southern Gandhara of Vardanes I (40-45 A. D.). After the time of Andhra king Hala (69-94 A. D.), the composer of the erotic poem Saptasatakā, Andra dominions were overran by Pehlevans and Kshahartas.

Saka (Chinese Sok : Gk. Sacae = Scyths = Caspian) was a pastoral people living in the region of Kashgar. Pressed by Yuechi (they are described having blue eyes, a trait of the Aryans = Tochari = Assi = Asvaka) and in alliance with Parthians they settled about 160 B. C. in Seistan (Sakastan in

Western Afghanistan) and in the Kabul valley (Kapisi). And from Kapisi, Taxila, Western Punjab, Mathura, Malava, Maharashtra and Gurjarat. From Seistan, Sakas occupied Sind, Patanjali places Abhiras—an advance guard of the Sakas—in Sindhudesa in the end of the 2nd century B. C. Mahārāstra Sakas belonged to Kshaharata line; their capital was Nasik. The Nasik, Karle, Junnar, Pandulena cave inscriptions show that the considerable parts of Mahārāstra were in the possession of Napapana, the Kshatrapa of the Kshahrata (Karatai). Provincial viceroys bore the title of Satrap (Kshatrapa or chhatrapa). In the lower classes of Mahārāstra, Mahar, an Australoid tribe, predominates. In the middle classes there is a Caspian tribe, Ratta, known in also as Aratta (MBh. Karna P. 45) from whom *Anarta*, *Surashtra* and Mahar-rāstra and Reddi in Deccan have been named. Rathors and Rāstrakutas also derive their name from Rattas. Saka factors predominate in the upper classes. The Northern Satraps had their capital at Taxila and at Mathura. The Western Satraps at Ujjaini and at Nasik. Pressed by Parthian Sures Vones, Saka Mawes conquered Gandhāra and Taxila from Menander's son Strato. But Mawes could not conquer the Greeks of eastern Punjab. Before Mawes conquered Taxila, the Greeks had already lost Mathurā and the territory between the Ravi about 90 B. C. By 60 B. C. Sakas across Rajputana and Ajinere occupied Mathura under the leadership of Hagāmasha and Hagana; their successor Satrap Raguvala issued coins from the mint of Strato. The Greeks still held Sakala and the territory between the Jhelum and the Ravi. But being pressed by the Sakas from Mathura and Parthia, Azes in the Panjab, the Greeks lost everything and some were killed, and others were absorbed in the population. The fight for supremacy between the Macedonian Eucratides and Hellenic Demetrius out of rivalry robbed them both of their vast conquests and grand schemes, and ended in their mutual revengeful slaughter, and paved the path of Parthian and Saka expansion and conquests. And Trans-Oxania lost vast fertile agricultural areas and a great civilizing influence through the wanton destruction of intricate irrigation works of the Oxus and flourishing Greek and mixed Greek towns by the nomads. The Saka onslaughts gradually destroyed the Andhra empire,

and the Abhiras (Avars) and Kadambas (another Saka tribe) conquered respectively the western and southern portions of the Deccan. Saka era of 78 A. D. commencing at Caitra Sukla possibly was introduced by Chastan of Ujjaini. Chashtāna ascended the throne in 78 A. D. and Saka era was calculated from this regnal year.

Abhiras (Avars) belonged to a closely allied Saka tribe. They were the trusted army officers of the Sakas. They were located in 7th century B. C. in Sindhudesa and 6th century B. C. in Avanti. It is said that Abhiras plundered the caravan of the family members of Yadava Krishna and abducted many of Vrisni women which Arjuna was escorting into Jayapur area. By killing the Talajanga Vitihoṭra ruler, commander Abhira Punika placed his son Mahasena Chanda Pradyota, a contemporary of Bimbisara, Buddha, on the Avanti throne. In retaliation Pradyota's younger brother Kumāra Sena was assassinated by the Talajangas in the Mahākāla temple while he was occupied in discussing about the merits of offering human sacrifice and selling human flesh (Bana's Harshacarita). Pradyota had two sons—Gopāla and Pālaka—and a daughter Vāsabadatta who eloped with his father's prisoner Udayana of Kausambi and married him. In the succession contest between the two brothers, Pālaka succeeded in winning the Avanti throne. But Arjaka, son of Gopāla, with the aid of Abhiras, revolted, and Abhiras killed Pālaka. Taking advantage of this disorder, Udayana claimed the Avanti throne on behalf of his wife and secured it. "During the reign of the king Kshatrapa lord Rudrasimha (181 A. D.), the son of the king, the Maha Kshatrapa son of lord Chashtana, the well (vāpi) was caused to be dug and embanked by *Senapati* (commander-in-chief) Rudrabhuti, son of Bāpaka, the Ahhira, at the village Rasopadra for the welfare and comfort of all living beings". A Nasik inscription shows that Isvarasena (Isvaradatta 188-190 A. D.) became Mahākshatrapa of Mahārastra and conquered it from the Satavahanas. "Success. In the ninth year of the king Isvarasenā, the Abhira, son of Sivadatta, the Abhira, by the lay devotee Vishnu Datta, the Sakāni, mother of Ganapaka Visyavarma, wife of Ganapaka Rebhila, daughter of Agnimitra, the Jaka, for the well being and happiness of all beings in order

to provide medicines for the sick." In the third century the Abhiras were checked by Kadamba ruler Mayursarma about 258 A. D. This tank is constructed by Mokari Mayur Sarman of the Kadamba who has defeated Trekuta, Abhira, Pallava, Pariyatrika, Sakasthana, Sayindikur, and Punāta. In the bilingual Paikali inscription of the Persian usurper Narseh in war against Varhran III in 293 A. D. he received support from the Sakas and from *Abhiran* sah (king), one of the Mahakshatrapas ruling over Indian territory of Sakastan, and Varazgarte shah, the king of Abhira" The Abhiras occupied a tract in western Rajputana near Vinasana called Abiria by Periplus. According Puranas the Abhiras ruled Avanti (Western Malwa) and Surāshtra. Pallavas (Pelhevans = Parthians) occupied the Satavahana provinces of the South. The inscriptions found at Mayidavalu in Guntur and Hiradgalli in Bellary of the first Pallava king Siva Skanda Varman state that he ruled over Andhrapatha, Sātahani Raths and Kanchi, and performed Asvamedha sacrifice. Satavāhana Kaundinyas closely related to Chutu Satakarni colonized Cambodia and called it Champā, after its people Chām. The Chinese called *Kaundinyas* Kin-lien and contracted peace with them in 138 A. D. Kaundinyas were in power up to 248 A. D. when they were supplanted by Pallavas under the leadership of Bhadravarma who assumed the Pallava title of *Dharma-Mahārāja*. The Pallavas assumed the power of the Sātavahanas not only in Southern India, but also in their oversea colonies. The Pallavas also occupied Western Java and Borneo. Sanskrit inscriptions of Purnavarman at Chi-Aruton in about 450 A. D. mention that his grandfather about 375 A. D. conquered it. Asvavarman about the same time conquered Borneo as Kaeteis inscriptions reveal. Relief sculptures of Simhavishnu (575—600 A. D.) shows him to be tall with wide chests, seated on a chair, wearing trousers and his queens by his side are tall, have fine ellipsoid face and long slender nose; Mohendravarman (600—625 A. D.) is similarly tall and and his two nude queens are tall figures with refined ellipsoid face, as found is Adivaraha cave temple of Mahābalipur. There is a Brahmi inscription of first century A. D. on a sandstone column in Pahladpur in Ghazipur District in N. W. P. with

Parthivan Kapālah—protector of the army of the Parthivas. **Yuechis** are Tocharian Aryans, speaking the centum variety of the Aryan speech. Kanishka statue of the Mathura museum has the moccasin shoe of snowy countries with upturned toes like the Khattis who also spoke similarly. Kujula Kadphises (Kien-tsiu-Kio) united the 5 tribes (called also Yaksha Dynasty in AMM 538) of Yuechi, including the Kushans and Kidar (Kitoto), conquered the Kabul Valley, and occupied Taxila, overthrowing the Greco-Bactrians. Kadphises, imitated Roman coins and used the titles of Yavuga and Mahārāja Rājātirāja (45—85 A. D.). He was succeeded by Hima Kadphises who completed the annexation of Northern India. His conquests opened up the commerce between China, the Roman Empire and India. He issued bilingual gold and copper coins with a life-like representation of the monarch on the obverse side and Siva worship on the reverse. In Kharosthi inscriptions Kadphises II is called *the great king, king of kings, lord of the world, Mahisvara, the defender*. After him Kushan Kanishka became the lord of Kabul, Kashmir and Northern India. His dominions extended from Mathurā to Bukhara. Kanishka professed eclectic Buddhism. And to propagate this eclectic Buddhism—Mahāyāna—he convened the fourth Buddhist Council of Jalandhara under the presidency of Vasumitra. The interchange of ideas throughout his vast domains brought out an intellectual ferment, thus resulting in this change of broader outlook and humanity. He made Purushapura (Peshawar) his capital. The last of the Kushans is Vasudeva (152—176 A. D.). His coins exhibit the figure of Siva with Nandi bull. His inscriptions have been only found in the Mathura regions. It seems that the Kidarās (another tribe of the Yuechi Tocharis) pushed the Kushans to the Indus and Mathurā regions. Kushans encouraged Sanskrit learning. They were patrons of art. It was a period of great literary activities. Asvagosha, Nāgarjuna, and Charaka were patronized by them. *Vakataka*, Bharasiva and Nava Nāgas belonged to Scas Nāga (Saka) tribe. Between the third and the fifth century A. D. they held dominant positions in upper and central India and in Gangetic Doab. Mahesvara Naga, son of Nāgabhatta is found in Lahore copper seal inscrip-

tions. Chandrānsa, the second Nakhavant, is likely the Chandra of the Delhi Iron Pillar Inscription. Bhava Nāgas (Pravarasena) of the Bharāsiva *were besprinkled on the forehead with the pure water of Bhagirathi that had been obtained by their Valour* which is still commemorated by the Dasāsvamedha Ghat of Bārānasi where they performed ten (dasa) Asvamedhas (horse sacrifices). Chandragupta II Vikramaditya (385-413 A. D.) in order to secure his position sought alliance with the Bhavanāgas (Bharasivas) and asked for the daughter of their king Rudrasena I and married his daughter Kuveranāgā. Bhavanāgas governed Gangetic Doab as late as the time of Skandagupta. The Vakataka, Bharasiva and Navanāgas styled themselves as Dvija Brahmins. Possibly Nāgara Brahmins of Guzerat and Bulandshahar (Nagars; Jat Nagres many of whom are now Moslem converts), have been named after them. Among the Jats there is a Nāgrā tribe. As the Nagas were city dwellers for administrative purposes, Nagara—Town has been called after them, and Nāgarika a polished dweller of a city in contrast to the uncouth rustic—Grāmya (Gawar). Nāgara style of architecture consists of a four sided pinnacle (Sikhara) on a square body. They introduced Nagari script. For their foppish style of living and loose sexual morals, a Nāgara has become synonymous with a beau. Possibly Nagpur was one of their capital towns. Vidisa Nagas trace their descent from Sesha (Sces. 110—90 B. C.). Bhogin (90—80 B. C.), Rāma Candra (80—50 B. C.), Dharmavarman (50—40 B. C.) Vangara (40—30 B. C.) had Naga (serpent) symbols on their coins and their architectural monuments. Diodorus (Sicilus II) writes: "The Scythians had their first abodes on the Araxes. Their origin was from a Virgin born of the earth (Ella=Skt. Ilā; Gk. Era=Sax. Ertha), of the shape of a woman from the waist upwards, and below a serpent; that Jupiter had by her a son, named Scythes, whose name the nation adopted. Scythes had two sons—Palas and Nap(g)as, who were celebrated for their great actions and who divided the countries: and the nations were called after them Palians (Skt. Palas), Napians (Nāgas). They led their forces as far as the Nile on Egypt and subdued many nations. They enlarged the empire of the Scythians as far as the eastern ocean and to the Caspian

and Lake Moeotis. The nation had many kings from whom sprung the Sacans (Sakas), Massa Getae (Jats), Ari-Aspians (Asvas of Aria) and many other races. They overran (Assyria and Media". Interlaced serpentine bodies with pretty female human busts, and hooded serpents over the heads are the characteristic sculptural designs. The Guptas were the scions and petty chiefs of the Maurya (Maur—Moor) Guptas (Copts) of Karaskara (Kakar Jats : Karkata Naga) tribe. Chandragupta I son of Ghatotkacha was of Dharana (Dhauri Jat of Amritsar) clan. Among the Ahirs there is a Moriye clan with peacock totem. Chandragupta inherited his wife's possessions by marrying the Lichchavi princess Kumāradevi. Licchavis were ruling in Nepal (100—50), Tirhut if not in Pataliputra as feudal chiefs of the Kushans. In Chandragupta's coin on the obverse there are standing figures of Chandragupta and his queen Kumāradevi, and on the reverse the figure of Lakshmi with the epithet Lichchavayah. Their son Samudragupta was adventurous. He expanded his kingdom in all directions. He conquered the South and defeated Pallava Vishnugopa of Kanchi, Bhavanagas, Abhiras, Sakas, Kushans (Daivaputra shahi shahanu shahi). He in the beginning expanded at the expense of the Varasiva-Nagas by defeating the allied armies of Ganapati Naga, ruler of Malava (Dharadisa) and Vidisa (Berar : Padmavati ; its capital), Nagasena of Mathura and Achyuta Nandi of Ahichatra (Ramnagar in Rohilkhand). The Bharasivas of Kantipuri (Kantil near Vindhyachalam where the Vindhyaka ruler Vindyasakti 248—284 A. D. established Vindhyavasini temple) and the Nava Naga Guhas of Kalinga were also defeated. Karkota Nagas ruled in Mahismati on the Narmada and in Kashmir. Karkota Nagara, possibly the capital of the Karkota Nagas, is found in Jaipur State, 25 miles east of Tonk. Vindhyasakti is recorded as a Naga general, and he established his kingdom over the territories he conquered. Vakataka rock inscriptions have been found in Ajanta and Ghatatkacha caves ; in Nachne, Ganj and Dureha, stone inscription at Mansar. At Nandpur (Nandivardhana : Nagardhan) the Vakataka queen Prabhābati Gupta made a copper plate grant. Copper plate inscriptions have been also found at Riddhapur and Champak in Amraoti area ; at Khindsi

Dupia, Seoni, Balaghat, and Jubbulpore. Vakataka town sites in Ramtek area have been found at Ghughusgarh, Bhagart, Mansar and Khensi. Possibly Pavnar in Wardha District is Pravarapur, founded by Pravarasena I. The Vakatakas favoured Saivism. And eight stone lingas, about 5 feet high with a rounded upper part of 1 and $1\frac{1}{2}$ feet have been found at Mansar; a similar one at Khindsi and another at Nandpur. Vakataka carved stone fragments show the Vakatakas with mesocephalic head with long combed hair, high-bridged prominent long thin nose, long brows, shaven oval face but somewhat thick lips and gazelle eyes. Murundas established diplomatic relation with Samudra. His eldest son Rāma Gupta reigned only for a few years. In an expedition against Kushans he was accompanied by his wife Dhruva Svāmini who fell into the hands of the enemies. For this disgraceful cowardice, he was killed by his younger brother who occupied the throne under the name of Chandragupta II. In the disguise of his mistress Chandra Gupta secretly entered into Kushan Shaha's private bed chamber, killed him, rescued Dhruva Devi and married her; he also married Kuveranagā, the daughter of Vakataka Maharaja Rudrasena I. Prabhavati was the daughter of this union and she was given in marriage to her maternal uncle Maharaja Rudrasena II, son of Prithivisena. Though Pataliputra was the capital of his ancestors, after conquering Malava, Saurashtra and in alliance with Vakataka Nagas Chandragupta made Ujjain his second capital. He assumed the title of Sakari Vikramaditya. He was a Vaishnava. He was a patron of learning. Nava Ratnas (nine jewells) of literature and arts, including Kalidāsa, possibly decorated his court at Ujjain. His successor Kumargupta was his son with his union with his brother's wife Dhruva Devi. Maukharis claimed descent from Asvapati. Asvapati was the title of the Madra (Manda) kings. Maukharis were in matrimonial alliance with their allied kinsmen Pushpabhuti Vardhans. Maukharis were mixed Murunda (Manda) Sakas. A seal with the inscription *Mokhalinam* has been discovered in a script of Asokan period. The Maukharis rose in power in Jawnpur and Gaya areas, sometimes as allies and at other times as rivals of the Guptas. The Maukharis had Varman as their

title. Their fourth and fifth king Isānavarman and Sarvavarman assumed the title of Mahārājādhirāja. Their last king Graha-varman of Kanauj who had married talented and highly gifted pretty Rājyasri, daughter of Prabhakaravardhan of Thaneswar, and sister of Harsa, was treacherously killed in a war by Malava king Mādhava Gupta and his crafty ally Sasānka Narendra Gupta of Karna Suvarna (Murshidabad area). Mādhava Gupta occupied Kanauj, and imprisoned Rājyasri like a brigand's wife with a pair of iron fetters kissing her feet, possibly because the proud princess refused to entertain the victor with her physical charms. Moreover Mādhava Gupta was enamoured of Rājyasri, for Mādhava Gupta and his brother Kumāra Gupta were brought up together with her as hostages by her father Prabhakara Vardhana after his conquest of Malava. The mighty Gupta Empire about 450 A. D., a few years before the death of Kumāra Gupta, was terribly shaken by the invasion of Pushyamitras—a Little Kushan tribe. Kumar's son Skanda Gupta drove back the Pushyamitras with great difficulty. But about 458 A.D. the HUNAS (Hiung-nu, Hoa, Hoatan = mixed Alpines, possibly mixed with Yuechi, in alliance with Gujar (Khazars = Kazaks (rider) from which Cossack has been derived = Qajar = Kirghiz = Alpines) attacked the northern territories of Skandagupta, overcoming the Sassanians (sāstra = sāsana = administrative orders) of Iran and Kushans of Kabul. The Sassanians were of Kushan origin. The coins struck by viceroys in Balkh, Merv and later by provincial governors bear the title of the *king of the Kushans*. In the first century A. D. the Chinese drove the Hiung-nu westward. One division of the Hunas (Huns = Hiung-nu) occupied Trans-Oxania. The other division pushed further west and occupied southern Urals. From this region the Huns invaded Europe. And in the ninth century A. D. from the Don basin the Huns (Magyars) pushed to the Danube basin, settled there and called it Hun-gary. Skandagupta drove back the Huna hordes. Skandagupta's empire still extended from Surastra (Kathiwar) to Sravasti. For we find that Skandagupta's viceroy Parmadatta rebuilt the embankment of a lake near the Girnar Hill which had burst and erected a temple of Vishnu in 458 A.D. Paramārtha in his life of Vasubandhu, a Buddhist author of sixth century A.D. mentions that Vikramaditya of Apydhya (according to Hiuen

Tsung of Sravasti, Skandagupta assumed the title of Vikramaditya like his grandfather Chandragupta II and removed his capital to Ayodhya), a liberal patron of Samkhya philosophy, was induced by Vasubandhu of Pushkaravati to accept the doctrines of tolerant Buddhism. But about 465 A.D. the Hunas overcoming the resistance of the Sassanians overthrew the Kushans of Kabul and Gandhara and attacked northern India. By the terrible onslaughts of the Hunas and Gujars the mighty Gupta empire reeled, fell and were shattered into pieces.

The Huns completely overcame the resistance of the Sassanians (of Kushan descent) in 484 A.D. When they defeated and routed their army and killed their king Furuz, the Iranians remained under Huna domination until 537 A.D. when Chosroes Anushiswan destroyed their power with the assistance of Turks, also mixed Alpines like the Huns. Huna hordes in large numbers destroyed the Kushan power in Kabul, overwhelmed Gandhara, and poured into India. The Huna leader Toramāna occupied Malava in 500 A. D. and styled himself as Mahārājas. Toramāna's son Mihirgula (510-540 A.D.) made Sākala (Sialkot) his capital in India, while the headquarters of the Huns were at Bamiyan and Balkh. Yasadharman Vishnuvardhana of Karkota Naga descent of Thaneshwar whose kingdom was conquered by the Huns rose in rebellion in alliance with other ruling chiefs, Gupta scion Balāditya of Magadha and Maukharies, gave a crushing defeat to Mihirgula's army about 530 A.D. Mihirgula however forced out of India seized the kingdom of Kashmir which he ruled upto 540 A. D. when he died. Soon after his death the Huna empire collapsed being defeated by the Turks in Iran in 557 A.D. However the Huna and Gujar (Khazar=Gurjara) chiefs formed petty states and ruled Northern and Western India for a long time and penetrated far and wide. The Hunas established Gurjara kingdoms of Bhārochi (Broach) and Bhimal in Rajputana and Chalukya (Solanki related to Chopas, a Gurjara tribe; Pur. Siluka; according to some Macedonian Seleukides=Cālukya) of Vitapi. Mitrakas of Valabhi and Vardhanas of Puspabhuti dynasty of Thaneshwar were of Karkota Naga origin and they in alliance with Maukharies fought against the Hunas. Maukhari Isvara Varman (550-554) defeating Yasadharmana became emperor. But a successor of Yasadharman Vishnu

Vardhana, Prabhakara Vardhana of Thanesvara, the son of a Gupta princess, a petty ruler, aggrandized himself by successful wars with the neighboring princes—Guptas of Malava, the Hunas of the Punjab and Gurjars of Rajputana. In 604 A.D. Prabhākara Vardhana sent his eldest youthful son Rājya Vardhana to attack the Hunas in the Punjab frontier. While his younger brother Harsa was in a hunting trip, he heard the news that Prābhakar had become suddenly dangerously ill. Harsha hastened to his father's bed side, but found him already dead. A court clique favoured the nomination of Harsha as the successor of Prabhakar, but the victorious return of Rajyavardhana at the head of a large army silenced the clique and Rajyavardhan was crowned as king. But soon after his ascension to the throne Rajyavardhana learnt that his sister Rājyasri's husband Graha Varman Maukhari of Kanauj was treacherously killed by Malava king Mādhava Gupta in alliance with Sasankā of Karna Suvarna during the invasion of Kanauj by them, and Rajyasri was imprisoned by them. Harsha ascended the throne, drove out the Malava and Gaura army, rescued his youthful highly-gifted pretty sister Rajyasri who was about to commit suicide out of impotent rage. Harsha conquered Northern India, transferred his capital from Thaneswar to Kanauj. His empire extended from Narmada in the South, to the Himalayas in the North, from Saurashtra in the West to Kamarupa in the East. He attempted to extend his frontier in the south at the cost of the Chalukyas (Gurjara Solanki), but Pulakesin II proved to be too powerful and Narmada was fixed as the boundary between the two kingdoms. In 620 Dhruvabhata, nephew and successor of Siladitya Dharmaditya of Valabhi as an ally of Chalukyas fought against Harsha, but was defeated, sued for the daughter of Harsha. As a son-in-law of Harsha Valabhi became a vassal state. And Hiuen Tsung mentions that when Harsha held state councils, Dhruvabhata attended it as a feudatory chief of his father-in-law. Harsha was a powerful and enlightened ruler and administrator, as described by Hiuen Tsung, the Chinese pilgrim who was patronized by him and intimately associated with him. The famous Sanskrit dramas—*Ratnāvali*, *Priyadarsikā* and *Nāgānanda*—are ascribed to Harsha's authorship. Bāna who lived in his court also has left behind a biography of his patron—*Harsha Charita*. Harsha.

sent an embassy to China in 641 A.D. which returned in 643 with a Chinese Legation which remained in India upto 645 A.D. Wang-Hinen-tse who had been a commander of the earlier delegation headed a new embassy in 649 and before the envoys reached Magadha in 648 A.D. Harsha had died, and the country was plunged in disorder. Arjuna, minister of Harsha, usurped the throne. The Chinese envoys were plundered and many of their members were killed. Somehow Wang-Hiuen-tse and his principal colleague managed to escape to Nepal. The Tibetan ruler Srong-Tsan Gampo who had married a Chinese princess and through whose influence he became a Buddhist gave a thousand horsemen to avenge this insult to the eminent Chinese guests and asked the Nepal ruler whose daughter Bhrikuti he had married in 641 to reinforce the army. Nepal contributed a contingent of seven thousand armed men. With this army Wang-Hiuen Tse descended into the plains, stormed the frontier fortress of Tirhut and annexed it to Tibetan empire. Arjuna fled, but came back with a reenforced army, was defeated and was taken as a prisoner to China. 580 walled towns submitted. Bhaskara Varman, Harsha's vassal king and ally, made a present of an abundant supply of cattle and horses to the victorious army. Wang Hiuen Tse visited the scene of his adventures in 657 A. D. being sent by the Chinese emperor to offer robes at Buddhist viharas. He entered India by Nepal and visited Vaisali and Budha Gaya and other viharas and returned home through Kapisa (Northern Afghanistan), Bamian, and Pamir route.

The Turks replaced the Hiung-nu (Hun) tribes in the domination of the vast territory from the Trans-Caspian to the Indus—(according to the Chinese from Kashgaria to Gāndhāra, Kashmir (Kipin) and Pushkaravati (Peshwar). In 630 A. D. on his way to India Hiuen Tsung's safety up to Kāpisa (Kabul River region) was granted by a passport issued by the Kazan (Tong-shehu), the sovereign of the Western Turks. Soon after Tai-Tsung of the Tang dynasty vanquished the Northern Turks between 640-8 A. D., occupied Turfan, Kara shar and Kuchā. Emperor Tai-Tsung's daughter was secured in marriage by the Tibetan ruler in 641 A. D. and who had founded Lhāsā in 639, and introduced Buddhism in the

country, being influenced by his wife. But when Gampo died in 550 A. D. Tibet began to assert her independence. Kao-tsung (650-83), successor of Tai-tsung, conquered the Western Turks and annexed their territories in 659. In 661-695 A. D. the Chinese empire extended from Kashmir (Kipin) and Udayāna (Swat valley) to Korea. In 670 Tibetans revolted and conquered Kashgaria which remained in their hands until 692 when it again fell into the hands of the Chinese. This gave the Turks a great opportunity to reassert some local influence. Between 665 and 715 the Chinese domination in the territories between Syr Dariya and the Indus was weakened as the southern route through Kashgaria was closed by the Tibetans and the roads over the Hindukush were blocked by the conquest of Arab Kotaiba who with fire, sword, plunder and rapine was spreading Islam in Central Asia. In 713 emperor Hiuensung forced open the Pamir Passes against the efforts of the Arabs and Tibetans who sometimes rendered mutual aid. In 719 Samarkand and Khotan, threatened by Islam, sought the Chinese aid. Udayana (Swat), Khottal (Western Badakshan) Chitral, Yasin, Zabulistan (Ghazni), Kapisa (Kabul Territory) and Kashmir fought heroically against the inroads of Islam, being encouraged by the Chinese who conferred on their chiefs the title of kings. Chandrapira of Kashmir in 720 and his brother Muktapida Lalitaditya of Karkotaka Naga (Saka) dynasty in 733 received from the Chinese emperor the investiture as king. But in 751 the Arabs with the assistance of the Turkish Karluk tribes gave a crushing defeat to the Chinese army under the general Sienchi. The Chinese prisoners introduced the art of paper-making in Samarkand from which the Arabs spread it to Europe. Yasavarman of Vandir Audh dynasty, the maternal cousin and successor of Harshavardhana of Kanauj, had diplomatic relations with the emperor of China to whose court in 731 A. D. he sent an embassy. In alliance with Lalitaditya of Kashmir, he led an expedition against the Tibetans and blocked the mountain passes of that country, thus making a genuine common cause with the Chinese who were then in hostility with Tibet. Bhavabhuti, the famous dramatist of Malati Mādhava lived in his court. Vakpati is his Gauravāha has described Yasavarman's conquest of verdant Bengal.

But Lalitaditya (724-760 A. D.) envious of his ally and knowing the weakness of his army attacked Yasavarman's dominions and after protracted struggles Yasavarman was defeated and killed. With the defeat and death of Yasavarman, not only Kanauj became incorporated in the empire of Kashmir, but Lalitaditya acquired the right of suzerainty over the vast conquests of his former ally. To assert this right he marched towards the east and overran Magadha, Gaura, Vanga, Kalinga and Kāmrupa. In the west he conquered Malwa and Guzerat. In the North-Western frontier he defeated the Dards (Darada a mixed Alpine), Kambojas (Caspians) and Turks (mixed Alpines). The Arabs' thirst for spoils and proselytism became whetted by their unparalleled successes. They overran the Sassanian empire by 650 as it was exhausted by a hundred years war with Rome which began in 526. Zoroastrianism the pride and glory of the Parsas was humbled to the dust. Persia became Islamized on pain of death. Only a few adventurous Zoroastrians could flee from the beloved land of their ancestors to Western India for political and religious asylum. The battle of Kadisiya on the Euphrates canal in 637 decided the fate of the Sassanian empire and every province of it from the Tigris to the Oxus fell into the hands of the Arabs by 650. Syria had fallen in battle on the Yarmuk, and in 689, the Arabs were masters over Egypt. In 664 the Arabs invaded Kabul and made its Tocharian Shahi king tributary and forced 1200 persons to accept Islam. It is likely that from Kabul an expeditionary force under Mohalik explored the Indus and carried some captives from Multan. Caliph Omar sent an expedition to Sind in 637, but it was a failure. Md. bin Kasin with a disciplined army of 6000 troops attacked Sind in 712. Many of the Jats (Getæ) and Meds (Mands - Cimmeri) of Western Sind joined the invading army, for Dahir, the ruler of Sind being a Saka Buddhist, antagonized the Jats. And the Arabs were aided in their conquest of Sind by Balhara. Balhara is the corrupt form of Vallabha (Beloved) which was the epithet of Rastrakuta (Ratta - Aratta = Saka among whom sister's son inherited property) kings, in order to defeat the Gurjaras who were in control of Western Sind and Rajputana and who opposed stubbornly the Arab invasion and

Rastrakuta aggressions. Arab and Islamic aggressions were also encouraged by mutually antagonistic policies and suicidal rivalries of petty states into which Northern India was split up after the downfall of the Gupta empire through the mighty impact of the Huna advances. There was no central government nor any national sense of common ideal or motive. Vajraudha, son of Kamalaudha Yasavarman of Kanauj, asserted his independence of Kashmiri imperialism. Jaypura (772-802), grandson of Lalitaditya, marched to the south to suppress the revolt of Vajraudha. Vajraudha was defeated. But during his absence Kashmir throne was occupied by his brother-in-law Jajja. Taking advantage of this, Indrāudha, son of Vajraudha, revolted, but Indrāudha was defeated and his brother Chakraudha was placed on the Kanauj throne. Indrāudha begged the military aid in 782 of Gurjara Pratihara king Vatsa of Villamal (in Rajputana). Vatsa attacked Kānyakubja, defeated Chakraudha and reinstated Indrāudha on the Kanauj throne, and advanced towards Bengal. But Gurjara overlord Vatsa's advances were not only checked by the combined army of Dharmapala (791-831) of Bengal and Rastrakuta king Dhurva Dhṛāvārsa (763-774), but was also forced to flee to the Rajputana desert. Pals of Bengal were of Kamboja origin (Rājyapāla in his Irda copper plate calls himself as Kāmboja vamsa tilaka = Glory of the Kamboja tribe). They were powerful kings with great organizing capacity. They professed Buddhism in religion; their government was highly centralized; Dedda Devi (which reminds the Kashmir queen Diddā, a Shahi princess who combined love and politics in her administrative affairs), daughter of Bhadra (Jyestha Bhadra, a feudatory of Bhaskara Varnam), was married to Gopala, issuer of hundred commands (Kalimpar Grant of Dharmapāla). Rastrakutas and Pals defeated Indrāudha and placed on Kanauj throne their protégée the subservient Chakraudha. Gurjara lord Nāgabhatta II, son of Vatsarāja, organized the Gurjaras into a mighty force. He conquered Anartha, Malava, Matsya, Turushka (Turks) Kirata (Nepal), fell upon Kānyakubja, defeated feudatory, Chakraudha and made Kanauj his capital. Nāgabhatta's successor was possibly Rāmabhadra (825-840) whose progress was checked by Devapala of Bengal and his maternal uncle the

Rastrakuta Govinda III. His son and successor was Mihira Bhoja (840-90) who styled himself as Adi Varaha (the original Boar), the incarnation of Vishnu. Bhoja's empire extended from the borders of Bengal to Sutelej, from Kathiwar to the Himalayas, including in it most of Rajputana. Bhoja's son Mahendrapāla (890-908 A. D.), the patron and pupil of the poet and dramatist Rājasekhara of *Karpura-manjari* fame, ruled his father's vast empire except the Punjab and the Indus valley with great statesmanship, fostering arts and literature. Mahendrapāla was succeeded by his son Bhoja II who ruled only for three years. He was succeeded by his half-brother Mahipāla (910-40) who was defeated by Rastrakuta king Indra III in 916 and even Kanauj was captured. Though Mahipala with the aid of the Chandel king Harsha succeeded in recapturing Kanauj, but the outlying provinces Malava and Surashtra were lost and could not be recovered from the Rastrakutas. His son Devapāla (940-55) was forced to cede Guzerat. The establishment of the Solanki (Chalukya) kingdom of Anihilara in Gujrat by Mularāja in 961 shows that the Gurjara Pratihara lost control over it. When his grandson Rajyapāla was on the throne, Kanauj was invaded by Turki Mahmud of Ghazni in 1014. Finding resistance ineffective Rajyapala surrendered to the invader. For this cowardly and unpatriotic act, he was ignominiously beheaded by Vidyadhara, son of Chandel king Ganda (Khond). Mahmud came in 1017 to punish Ganda. Kanauj was plundered and levelled to the ground. Ganda fled, but was forced to surrender the temple fortress of Kalinjar, to the hated invader in 1018 A. D. After the Kushan Shahis lost Kabul (661-831) they established their capital at Udhbandpur (Und), 16 miles off from Attock. Sankar Varman (883-912) of Kashmir waged war against Lalliya Shahi of Udhbandapur, but could not subdue him, as he got military aid from Gurjara ruler Alkhan. Gopala Varman married Diddā, grand-daughter of Bhima Shahi of Udhbandpur. Bhima Shahi established a Vishnu temple—Bhima Kesaba—during the reign of Kshema Gupta. Diddā had great executive and administrative ability with statesmanly sagacity and talents though her sexual morals were rather unconventional.

Kanauj came under the possession of the Gaharwar clan of

the **Rathors** (Rastrakutas—Ratti—Reddi—Aratta Caspian). The founder of this dynasty is Chandradeva whose possessions extended from Kauanj to Bārānasi and Ayodhya. His grandson Govindachandra (1114-54) was an able ruler. His grandson Jayachandra has played a tragic drama in Indian history. Jayachandra after the Saka fashion performed Asvamedha Yajna in 1175 which was not attended by many Rajputs who were more or less of Gurjara and Huna descent. This was followed by Jayachandra's daughter Samyuktā's Svayambara marriage. Here also Prithiviraj, powerful ruler of Svambhar (Sakambhari) and Ajmere, though of Saka descent, out of rivalry did not attend, though he was in the town and was represented by a statue. But Prithiviraj was the hero of Samyuktā's heart and she placed the nuptial wreath round his statue. Prithiviraj managed however to elope Samyuktā under the cover of darkness. This caused bitter feelings between the Rathors and the Chahamanas (Chauhan) to which clan Prithiviraj belonged. Vighraharaja (Visaldeo) of Chahamanas clan of Sambhar and Ajmere in the middle of 12th century conquered Delhi from Tomaras—a Kushan clan. The Tomaras built Delhi in 998 A. D. where Kutab mosque now stands. The Tomara chief Anangapala built there the Red Fort and the temples out of the materials of which Kutab Mosque has been reconstructed. The Iron Pillar of Vakataka king Chandra erected at Mathura was removed and set up at Kutab by an Anangapala in 1052 A. D. Six polished marble slabs with Sanskrit and Prakrit inscriptions of a drama—*Harakali-nāṭaka* composed by Vighraharaja, and another composed in his honour—*Lalita Vighraha Raja Nāṭaka*, have been found at Ajmere. This literary emperor builder was succeeded by his son Somesvara; Prithiviraj, the lord of Delhi Ajmere, and Sambhar, the conqueror of Chandel king Parmal, the bold lover of Samyuktā, the gallant defender of his country against the Moslem invaders, the hero of hundred tales, was his son. Mahammad Ghorī with his Turkish army, the master of the great parts of the Punjab, directed his attack upon Delhi and marched towards the plains of Panipat. All the Gurjar states came to the help of Prithivi Raj; but the Rāstrakutas, and especially its northern chief Rathor Jayachandra of Kanauj, not only remained indifferent but even helped the invaders.

The Rastrakuta policy had been always to antagonize Gurjars and for that purpose even helped the invaders. In 1194 Turkish Md. Ghazni directed his invasion against Kanauj, the kingdom of his former ally Rathor Jayachandra. As Rastrakutas had always helped the invaders and antagonized the Gurjars, and Jayachandra particularly had proved to be a traitor to the national cause, Gurjars remained indifferent. Jaychandra met the invading army near Etwah. Though the Rathors fought bravely, they were overpowered. Thus through mutual jealousy and lack of co-operative spirit the entire territory from Gandhara to Baranasi passed into the hands of the Turks. The majority of the Gaharwar clan of the Rathor migrated to the arid area of Rajputana and founded there the state of Rathor Jodhpur. The Paramaras (Pawars) of Malava were of Gurjara origin. They migrated to this territory from Mt. Abu region. Krishnarāja founded in ninth century the Paramara dynasty at Dhara. This dynasty has been noted for its patronage of arts and literature and for Sanskrit learning. Its seventh king Munja was himself a poet and patronized the poets Dhananjaya and his brother Dhanika who were his court poets. Bhoja, the nephew of Munja, ascended the throne in 1018 and reigned for 40 years, fostering arts and literature. He is still a popular legendary hero. Though his valiant resistance against the Turks is often forgotten, he is still remembered not only as an enlightened patron of learning, but many books of astronomy, engineering and poetry are ascribed to him. He built the great Bhojpur Lake, covering an area of 250 square miles in southeast of Bhopal. He established a large Sanskrit college within the precinct of the Sarasvati temple of Dhara which has now been reconstructed into a Mosque. But Kālachuri (Abhira) king Karnadeva (1041—1012) and Solanki Bhima of Anahilwara and Chalukya Somesvara I of Kalyana jointly waged war against the learned king Bhoja in 1060 and brought the ruin of the famous dynasty. However Karnadeva had to repent ere long for his folly. Karnadeva was defeated by Kritivarman Chandel (1042—1100). In the introduction of Krishnamisra's *Prabodha Chandradaya* it is mentioned that it was staged to entertain Kritivarman's commander Gopāla to celebrate his

victory over Kalachuri Chedi Karna. And this victory was facilitated by the fact that Udayaditya, son of learned Paramara king Bhoja, revolted and recovered parts of his ancestral possessions from Karna according to his Udepur inscription of 1080. And Vikramaditya VI (Vikramānka), son of Chalukya Somesvara Ahavamalla of Kalyāna fell upon the army of Karna, drove his commander-in-chief Vajravarman southeast of Bengal, attacked northern Bengal which is depicted in Vilhana's Vikramanka Charita. Sāmanta Sen, a Hoysala chief of similar (Chalukya) origin, came as a military commander of this Karnata army and ruled as a governor at Rārḥ. Vighraḥapal had three sons—Mahipal through Chedi king Karna's daughter Jauvanasri, and Surapal and Rampal through a Rastrakuta princess. Jātavarman who married Mahipala's mother's sister Virasri and who was kept as a governor of Vanga by his father-in-law Karna, helped his wife's sister's son and defeated the Kaivarta rebel Divya, Govardhana (ruler of Kusumba in Rajshai) and the king of Kāmarupa and became the defacto ruler of Gaura, according to Velab (in Dacca) inscription of Bhojavarman, his grandson. But Vajravarman's son Jātavarman did not live long, and was succeeded by his son Harivarman. But Mahipal II and his protege Harivarman could not enjoy the sovereignty of Gaur unmolested for long. According to the Nagpur inscription of Lakshmanadeva, Naravarman and Jagata Vijaya Malla, their father Paramara Udayaditya, son of Bhoja, revolted against Karna's suzerainty in Malava and asserted its independence. Desiring elephants they advanced towards Gaur, defeated Hari (Varman), entered into Gaur capital where they found its ruler terrified, and the kings of Anga and Kalinga submitted to them. Taking advantage of this confused state of things, Bhima, son of Rudraka, brother of Kaivarta rebel Divya, lorded over Varendra (northern Bengal) and defeated Vighraḥapal who in utter helplessness became a monk. But when his identity was found out later, he was murdered by his step-brother Rāmpal. Rāstrakuta forces, led by Mahādeva and Sivārājadeva, the maternal uncle and maternal cousin of Hari-Pal and Rampal, intervened on their behalf and installed Hari-Pal on the throne. The army of Paramara Udayaditya's sons of Malava drove Harivarman towards Kalinga where he ruled

for many years, possibly as vassals (1076—1147) of Chola (originated from E. Chālukyas) Ganga dynasty and built many temples at Bhuvanewar. Samalavarman, brother of Harivarman and grandson of Kalachuri Chedi Karna, instead of opposing the Malava army led by Udayāditya's sons, rather concluded peace with them and married Paramara princess Trailakya Sundari (Mālavya devi), daughter of Udayāditya's son Jagat Vijaya Malla. But Samalavarman in spite of the assistance of the Paramara forces could not retain his authority as the ruler of Gaur for long, due to the pressure of Rāstrakutas, the adherents of the Pals and the Kaivartas of Varendra. Sāmala-Varman in order to strengthen his position went to his ancestral place Simhapur and married Sudakshinā, the granddaughter of Harihara (988) of Seodeni where he ruled as an inscription shows as a vassal of Chandra Deva of Rathor (Rāstrakuta) Gahādval dynasty of Kanauj whose authority extended over Delhi territory, Ayodhya and Baranasi. At the time of Sāmala-varman, Chandra's grandson Govindachandra (1114—1154) ruled at Kanauj. Sāmala-varman brought some Brahmins from Kanauj and from Karnāvatī (Barānasi was called Karnāvatī from the overlordship of his maternal uncle Karna where Karna's grandson Gayakarna still ruled) to make some auspicious sacrifices on his behalf. These Brahmins are known as Pāchhātya Vaidikas. Sāmala Varman also granted some land to goddess Prāgnāpiramitā. It is also likely that he brought some valiant grandsons of Chandra of Gahadval Rathors from Kanauj and settled them in deltaic east Bengal and called it Chandradvipa after them. Three copper inscriptions of Srichandra, grandson of Suvarna Chandra, have been discovered. One says that Suvarna Chandra son of Trailakya Chandra, having royal ancestry on both sides, inheriting the kingdom of Harikela, became the king of Chandradvipa. But the confederacy of Rampal succeeded to crush the Kaivarta rebellion. By this victory and the pressure of Hoysala Chalukya Senas, Sāmala-varman was forced to move to Eastern Bengal where at Vikrampur he established his capital; he was succeeded by his son Bhojavarman. Bhojavarman or his son was compelled to submit to Rāmapal as *Rāma Charita* (3, 44) says that a Varman ruler of eastern province solicited the

protection of Rampal by presenting him with elephants and chariots for his own safety.

Haysala Ballals came as military governors of Chalukya Vikramāditya VI. Ballal is the designation of Billava (Tulava) chiefs. Billavas were bow-men. But they had the designation of Baidya (physician), as they were toddy-trappers. Syana Baidya found in a palm forest a Joti Brahmin maid. He rescued her and had her (Deyi Baidyedi) married to his nephew Sayāna Baidya. Sayana Baidya's descendants were known both as Baidyas and Pujaris (priests; Seletore: Ancient Karnataka). Ballal descendants called themselves Brhama Kshatriyas, possibly after the descendants of Sayana Baidyas. In Bengal Baidyas are generally physicians like the Billavas and have usually the title of *Sena*. Ballal was succeeded by his son Lakshman Sen. Lakshman's inscription discovered at Madainagar says that his mother Ramā Devi was a Chalukya princess. Lakshman Sen brought under his possession Magadha at the end of his era, as Lakshman Era is found to have been used in two inscriptions of Asoka Challa (1170 A. D.) of Sapaḍa and that of his brother Dasaratha in 1193 that has been discovered in Bodh Gaya, though parts of Magadha still remained under the domination of Govinda Pal of Pāla dynasty. The two inscriptions of Kesava Sen and Visvarupa Sen, sons of Lakshman Sen, discovered at Madanpāra (Kotwalipārā) show that Lakshman Sen erected Pillars of Victory in Baranasi and Prayag, and at Jagannātha's place (Puri) on the Southern Sea. Though Lakshman Sen succeeded to conquer parts of Magadha and Varānasi from Gahadval (Rathor) Jayachandra of Kanauj, it was only for a short while. Kutabaddin crossed the Yamunā in 1184 and united with 50,000 well-disciplined well armed and heavily mailed Turkish army of Md. Ghorī advanced towards Baranasi where only after a severe sanguinary war could defeat its king Jayachandra, whose inscription dated between 1183-1192 has been found at Bodh Gaya.

12 Chiefs (Bāra Bhuyas) of Bengal gave stubborn resistance to the Turkish, Afghan and Moghul armies in Bengal. They were generally Kāyasthas. Kāyasthas of Bengal have Alpine factors in them. That might have been derived from the Ballal Senas who were Chalukyas (Solanki, a Gurjara tribe)

and from the Huna settlements or from both, all leptorrhine brachycephalic mixed Alpines. Khajars settled in the southern Caspian area. And the Qajar dynasty ruled Iran till recently with Teheran as their capital. Many of the Rajputs are of Gurjara (Khajar) descent as Pawars (Paramars), Parihara (Pratihāra), Solanki (Chalukya=Chalkya); Chahamana (Chauhan) is of Saka origin; Rathors (Rastrakutas=Ratta, Aratta, Reddi) is Caspian; Hunas are also included among the Rajputs. For their indomitable courage and heroic resistance in the cause of their liberty and freedom against the Moslem aggressions, the Rajputs have glorified medieval history, otherwise a dark period for cultural achievements. No doubt Kāyastha has been derived from Kathi, a Saka tribe. And Sakasena is mentioned as one of their progenitors. But Bengal Kayasthas have surnames like the Nāgara Brahmins (Nāga=Huangnu) of Gujarat who are chiefly Alpines, though Nagra was a Saka tribe (Nagre Jats; Nagars). The following 13 surnames of Nāgara Brahmins of 1226 A.D. resemble closely the surnames of Bengali Kayasthas. Datta-Guptau Nanda Ghosau Sarmā Dasau; Varma Nāga Datta Trata Bhutau Mitra Devau Bhavau. Mahabuti Varman in 53 A. D. brought to Assam Nāgara Brahmins with their tutelary Hatakesvara Siva lingam. In the Nidhanpur inscription of Bhāskaravarman (610 A. D.) of Kāmarupa we find surnames of these Brahman donees as Adya, Kirti, Kunda, Ghosa, Datta, Dāma, Dāsa, Dhara, Nandi, Nāga, Pātra, Pāla, Pālita, Prava, Bhuti, Mitra, Bardhan, Vasu, Sena, Soma, Bara. In the Tripura inscription of Lokanatha Nripa (663 A. D.) the surnames of Brahman donees are Deva, Dāsa, Datta, Nandi, Soma, Chandra, Dāma, Ghosa, Bhuti, Rudra, Mitra, Bhadra, Vappa, Gopa, Basu. In the Neulpur copper plate inscription of king Subhākara Deva of Orissa of 8th century A. D. the following surnames of Brahman donees are found—Deva, Kara, Chandra, Pāla, Bhūti, Nāga, Bardhana, Ghose, Kundu, Basu, and Dhara. Bengali Brahmins, Kayastha and Nāgara Brahmins show almost equally brachycephalic heads and leptorrhine nose (about 65 p. c.). Pals having originated from Kambojas were leptorrhine dolichocephals. Varmans like Kalachuri Chedi Karna were of Abhira descent; therefore similarly leptorrhine dolichocephals; originally Rāstrakutas (Rathors) were also the

same. Sāmmada are called Mina (Mene = Manu = a Mediterranean tribe in Rajputanā) Rājputrāh, the joint composers of Rv. 8, 56(67). Possibly from this Mina Rajaputrāh the name of Rajputs has been derived. **Bene Israel** are the Babylonian captive Jews who came to Navagaon (Bombay) in sixth century A. D. **Cochin Jews** came perhaps in 490 A. D. as the date is inscribed on a copper plate grant of Cranganore. It is also said that Romans transplanted a Jewish colony in 2nd century A. D. for commercial purposes. 4 Jews joined them from Amsterdam in 1685. **Syrian Christians** are similar in appearance to the Nayars. It is said that Furthus Thomas Cana, a Nestorian merchant, arrived at Cranganore in 8th or 9th century with 400 Christians from Bagdad and Jerusalem. Thomas married two wives, a Nayar and Mukhuvān; they received grants to be merchants of Kerala. **Karhada** or Karhata is the clan name of Saka Nahapana (78—120 A. D.) who conquered Malava, Konkan, S. Deccan. The Gurjars pressed in N. India and Sind by Turks migrated to Konkan Ratnagiri coast in 7th century A. D. Both these tribes are mixed. Some Karadas migrated to Chiplum from whom **Chitpavans** have originated. They are generally fair, handsome with greenish gray eyes. They contributed majority of the Peshwas. **Parsis** to a certain extent have been mixed with the Bhils.

In the beginning of the Moslem conquest, the majority of the conquering hordes, particularly the nobles, were Turkish (mixed Alpines). Firuz Shaha Tuglug was the first monarch who extended his favours to the Afghans. The Mongol invasions introduced a small element of Mongols. Alauddin Khalji massacred majority of them on the rebellion of some of them in Gujrat. Tughluqs were a mixed breed of Turks with the Jats. Fierce Khalkha Mongols were called in Puranas as **Kalki**. The later Moghul conquest introduced some Mongols, Iranians and Turks. In the coastal towns particularly of Gujarat, Arabs, Abyssinians, and Turks came and settled in considerable numbers. The Portuguese, Dutch and British occupation have but slightly tinged some lower class population in harbour areas and have produced a dwindling number of Eurasians. Even in former days when with wooden ship navigation was hazardous, and only a few women could come, mixed marriages have been

very few and they have generally lived apart in their own colonies.

GOVERNMENT, MARRIAGE AND RELIGION

Government.—Aryans practised constitutional monarchy. Their king Rājan was their leader and servant. The king for protecting his realm from foreign aggressions and for maintaining law and order within his domain was entitled to one-sixth of the land produce and the fines imposed on the offenders of laws. Cattle was their standard value and medium of exchange. Some taxes were levied on some imports, particularly on Soma (*Cannabis sativa*). Soma traffickers (Soma vikrayin) became unpopular, for they charged a high price for their commodity, as on it not only royal import was levied, Soma had to be transported also from long distance (Caucasus region) and it changed many hands in its long transports and it became withered, dried and often adulterated (Manu. 3, 80). *Purohita* (placed in the front) was the chief minister, protector of the ruling family and the clan and the interpreter of laws, administrative, social and religious. He was the most important functionary of the state. Ministers are the *rājakrits*—makers of sovereignty. Mantri Parisad (the cabinet of ministers) should consist of eight members (Manu - 8, 54) which Sukraniti (2, 71-72) mentions as follows : (1) Sumantra—minister of finance ; (2) Pandita—minister of culture, possibly, the elected leader of the learned professions ; (3) Mantrin—the minister of domestic affairs ; (4) Pradhāna—the president of the ministers—premier ; (5) Sachiva—colleague—minister of war ; (6) Amātya—minister of agriculture ; (7) Pradvivāka—minister of justice ; (8) Pratini-dhi—elected representative of the families, belonging to the ruling clan. Later Duta—the minister of foreign relations held an important office. Yuvaraja—the heir apparent and designate had a right to be present in the deliberations of ministry. The king was simply the executive head to carry out the decisions by the majority of the votes of the ministers.

Andhaka-Vrishnis of Alpine Yādavas had democratic joint

federal republican (Sangha) constitution. Ugrasena was its president; Vasudeva Krishna its executive chief; Ahuka on the side of the Vrishnis and Akrura on the side of the Andhakas led the Federal Parliament. Krishna complains to his friend Nārada, uncle of Parvata, descendants of Kanva Medhātithi:—People call it glory. But really it is the service to kinsmen that I am performing. Privileged to have only half the executive powers, I suffer fully the brunt of bitter speeches (MBh. Santi (81, 5)). Their bitter speeches consume me always as a man twirls firewood for producing fire (6). Though Samkarshana is noted for strength, Gadhā for princely qualities and Pradyumna for beauty (which means that at least all the adult members of noble families had full franchise), still I am without a following (in federal parliament), O Nārada (7). Other Andhakas and Vrishnis have scheming propensities and they are redoubtable, being full of pep (8). As for Ahuka and Akrura, if they cast their favorable votes, they make him miserable by their demands. And if they are opposed to him, there is no greater misery. Either of the courses I do not like (MBh. Santi P. 81, 1-10). Vrishnis left behind in Mathurā issued in Suṅga period (2nd century B. C.) coins with the symbols of Chakra and half-lion and half-elephant—the fore parts of the two animals being joined together and placed on a pillar; and with the inscription in both Brahmi and Kharasthi—Vrishnir (a) Jajña ganasya trator (Gk. Sator) asya—for the protection of Vrishni oligarchic republic. Kshatriya (Khatti) Puru kingdom was monarchical, but imperialistic like the Khatti (Hittite). It was a strict military and political organization. It had definite laws and to the succession to the throne, diplomatic code with independent neighborly powers, relation with vassal states, civil and criminal jurisprudence. There was not only produce rent, there was also rent on cattle. City (Paura) magistrates levied one tenth of the goods that came to the market. There were well-regulated tariffs as fines for criminal offenses. There was a tax on brewing beer and taverns as well as temple prostitution. There was fixed price for land, cattle and produces. Any one buying land had to dedicate a part of it as a temple in the form of religious endowment. These temples had to be provided with girls. These girls were wedded to the gods, and as such practised religious

prostitution. But the income from these temples and religious prostitution belonged to the state (*Janapada*).

When Alexander invaded northern India, he found that it was occupied by a number of petty but powerful aristocratic (Gk. *aristos* = best; Sans. *arishṭa* = essence : *drakṣhāriṣṭa* = essence of grapes, that is wine. Gk. *Krati* = rule, *kratein* = to be strong; Skt. *kriyā* = action) republics of Saka origin. Buddhist literature mentions the republics of (1) *Sākya*s (*Sakas*) who assembled in their Mote Hall (*Santāgāra*) with 500 members at *Kapilavastu* to transact their state business. It was at such an assembly *Prasenjit* of *Khosala* (*Khasa*) sent his proposal to marry a *Sakya* princess and his son with the *Sākya* maiden *Virudak* was received; *Ambatha* in the *Suttanta* says: Once, I had to go to *Kapilavastu* *Sākya* congress Hall, where were a number of *Sākya*s, old and young, seated in the hall on grand seats. *Lalitavistāra* (ch 12) mentions *Santhāgār* of *Sakya-gana* (republic) consisting of 500 members. (2) *Koliya*s—*Kulutas*, *Koli*—who occupied the *Kulu* valley where their copper coins with *Cakra*, *Svastikā* and *Hill* symbols have been found. Their allied clan *Kunida* (*Kanets*) are found in neighbouring *Simla* Hills. Their coins had stag, *Svastikā*, *Chatresvara* *Siva* with a trident battle-axe in one hand and leopard skin hanging from the left-hand. (3) *Licchavis* of *Vaisali* (*Basadh*) are known as *Vajjas* (*Vriji* of *Panini* 4, 2, 131) with 7707 members. When *Ajatasatru*'s minister *Varsakar* asked the opinion of the *Buddha* as to the advisability of invading the *Vajjis*, *Buddha* replied: *Vajjis* hold full and frequent assemblies; so long they hold it a point of duty to hearken to the words of their leaders so long may the *Vajjis* be expected not to decline but to prosper (Ms.). In *Jataka* (4, 148) *Licchavis* of *Vaisālī* are called *Gana* (republican rulers); they are 7707 in number, all of whom are entitled to rule (*rājana*); they become president (*rājano*), vice-president (*upo-rājano*), commander-in-chief (*senā-patino*) and treasurer (*bhāṇḍāgarika*). The rule (*rajjam*) was vested in the inhabitants (*vasantānam*). *Vaisali nagara* (city state) had a system of triple fortifications, having a population of about 1,68,000. According to *Attha Kathā* when the *Vaisali Gana* assembled in their House of Law (congress) the toscin used to be sounded, and there not only political and military

matters were discussed, but also agricultural and commercial ; and mahāttaka (a distinguished member) is appointed to be an envoy to speak on behalf of all Licchavi's (Mahāvastu 1, 254). The Licchavis of Vaisali heard that the Blessed One had arrived at Vaisali and was staying at Ambapali's mango grove. And they mounted magnificent carriages. Ambapali drove up against the young Licchavis, axle to axle. When the Blessed One saw the Licchavis approaching in the distance, he addressed the brethren : O Brethren, look at these *god-like Licchavis* (4). Executive powers were vested in representatives of eight families (Attha Kulaka=Ashta) who wore distinctive uniforms of different colours—blue (nila), yellow (pita), green (harit), reddish (manjishtha), red (lohita) and white (sveta). Even their chariots, headdress, shoes had this distinctive colour as their family badge. Mallas (Malloi of the Greeks) of Kusinagara and Pava ; it is to the Mote Hall of the Mallas that Ananda went to announce the death of Buddha, they being then in session there to consider that very matter (Mahā Parinibanna Sut 6, 23). Mala, Mālaya, Mālva, is found in the Multan area, which was perhaps their capital after their name. In second century B. C. they migrated to their new homes to Karkata Nagar in Joypur state via Bhatinda, leaving a trace of their existence in Malwai dialect extending from Ferozpor to Bhatinda. Possibly Karkota Nagas and Malas were identical peoples ; and Kshudrakas were their allied kinsmen. They had already settled in Malava, which was named after them. The Malla coins had their tribal name Mala, Mālaya or Mālava inscribed on them and they bore the symbols of standing lion, humped bull, fantail peacock. Malla coins resemble the coins of Ganapati Nāga. Mallanāga Vatsyāna is the author of the famous treatise on sexology—Kāmasutra. (5) Moriyas (Mura of Panini's Ganaptha, 4, 1, 151 ; Moeres of Patala in Sind ; Maurya Gupta=Moor Copts) of Pippalivana. (6) Balis of Allakappa. (7) Bhaggas are the Bhargas of Panini (4, 1, 178 ; Sabhā 30, 10, 14). Panini (5, 3, 115) mentions the following republics (Samghas) : (1) Vrika (wolf—Vikarna=Varkana of Darius and Avestan Vehrkan—Caspian) ; (2) Damani ; (3) Trigartta ; (4) Yaudheya ; (5) Parsva (Parsi) ; (6) Madra ; (7) Vridi (Vajji : 4, 2, 181) ; (8) Andhaka Vrishni ; (9) Bharga ; (10) Arjunāyanas (Panini :

4, 1, 112). Arjunāyanas occupied Bharatapur and Alwar area. Their coins of 100 B. C. had humped bull, camel and Arjunāyana jay (victory to Arjunāyanas) as symbols. Alexander's army found northern India occupied by numerous kingdoms and republics. The Republics trusted their self-appointed magistrates where the people are self-governed (Arrian 12). Kathai with Sankala as their capital on the Ravi was one of them. Kathai enjoyed the highest reputation for courage and skill in the art of war (Arrian Anabasis : v 22). They made waggon formation (sakata vyuha) against Alexander's army, thus obstructing their advance. Kathai is the Kathi of the Punjab, the Katha of the Panini (4, 3, 107), Katha or Kāthaka of Yajurveda recension, Kauthuma of Sāmaveda and Katha-kālāpa of Ramāyana (Ayodhya : 32, 18). In Katha Up. individual (Naciketas) was sacrificed for the collective welfare of the state and family. Neighborly to Kathai was the Sophytes state, Subhuta of Panini (4, 2, 75), close to Sankala. Kathas and Saubhutis in contract-marriage do not seek an alliance with high birth, but make their choice by the looks, for beauty in children is a quality highly appreciated. Here they do not acknowledge and rear children according to the will of parents but as the officers entrusted with the medical inspection of infants may direct, for if they have remarked anything deformed or defective in the limbs of the child, they order it (in Spartan fashion) to be killed (Strabo : 15, 30). The handsomest man among them is chosen as rājan (archon : Strabo 15, 30). The Sopheithes were governed by laws in the highest degree salutary and their political system was one to admire. Beauty was held among them in the highest estimation, and the inhabitants of their cities are generally held in higher estimation than the rest of their countrymen (Diodorus : 17, 9). The Yaudheya republic extending from Lahore to Delhi was exceedingly fertile and the inhabitants were good agriculturists, brave in war and living under an excellent system of government, for the multitude was governed by an aristocracy who exercised their authority with justice and moderation (Arrian 5, 25). Yaudhaya coins were struck in the name of *mantra-dharas* (council of ministers). The coins had in them the symbols of bull, elephant and a six-headed figure standing on lotus with the inscription, Bhāgvatah svāmīno

Brahmany devaya (Kumarsva), possibly their war god. Some coins are inscribed with *dama* (Gk. drachon). Their neighbors Audimbaras lived between Ambala and Kangra. There is an Audumbara clan among the Gujrati Brahmins. In their coins there is the symbol of an elephant with apraised trunk walking before udumbara tree (*Ficus glomerata*) where there is a trident battle axe with the legend Mahadevasa rāna Dharaghoshasa odumbarisa—Vispamitra. On the reverse side there is a male figure with a spear in his right hand. There is a striking resemblance between the Audambara Vispamitra and Azilesis coins. Compulsory adult military training was the rule with the Yaudheyas (modern Johiya Rajputs) for which they were called by Panini as Ayudhajivins—military training as the basis of their existence. The country beyond Beas is very fertile, living under an aristocratic form of government consisting of five thousand councillors, each of whom furnishes the state with an elephant (Strabo : 15, 37). The large numbers of Yaudheya soldiers and the fear of the great imperial army of Nandas of Gangardi (Gangā and Rārāh) disheartened Alexander's force and they began to hold conferences and positively asserted that they would follow no further (Arrian 5. 25). But in their retreat Alexander's army met with fierce resistance from Oxydrakai (Kshurdrakas), Malloi (Malla) and Siboi (Sibi Kekayas) on the Chenab. Alexander first reached the Malloi. Their cities were along the Chenab and their capital was on the Ravi. In a siege of the Malloi capital, Alexander was severely wounded. Malloi were allied with Oxydrakai and their united army numbered about 100,000. The Macedonians lost their heart at the prospect of meeting this army. When they found that they still on hand had a fresh war in which the most warlike nations in all India would be their antagonists, they were struck with an unexpected terror and began to upbraid their King in the language of sedition (Curtius, 9. 4). But Mallas submitted to the veteran well-disciplined army of Alexander. And they sent a hundred ambassadors who all rode in chariot and were men of uncommon stature (Caspian trait) and of very dignified bearing. Their robes were of linen embroidered with inwrought gold and purple. The gods they said were the authors of the submission and not fear. Alexander gave orders

for the preparation of a splendid banquet to which he invited the ambassadors. Here a hundred couches of gold had been placed at a small distance from each other and these were hung round with tapestry curtains which glittered with gold and purple (Curtius, 9. 7). The united army was led by an experienced Oxydrakai general (Curtius, 9. 4). Alexander's army in their retreat through the Indus was opposed by Abastoni (Ambasthas = Panini, 4. 1. 170). Ambasthas adopted the advice of their elders not to fight. Other peoples in opposition to Alexander's army were Ossadii (Vasatis : M. Bh. Sabha P. 52. 15;) Patanjali mentions Vasatis along with Sibis : 4. 2. 52 Musican (Muchu Karna : Kāśikā 4. 2. 80), and Patala (Haidarabad of Sind) of Moeres, Mura of Ganapatha (Panini, 4. 1. 151), that is the Moors. Phegalas seems to be Bhagala of Panini (4, 4, 80); Adrestai is the Arishtas of Panini (6. 2. 100), the Caspian Arattas (Rattas = Reddis) on the Ravi. Sudra (Chudes) Nanda imperial structure was a centralized government with an efficient army; in addition to other taxes it levied taxes on skins. Maurya empire preferred indirect taxes. It levied taxes on all imports except those which were beneficial to the country, and exports such as weapons, metals, grains and cattle which were needed in the country (Arthashastra 2, 22.). It nationalized mining and salt industry. It raised taxes from canals and irrigation works, gambling, wine shops and brothels. Asoka's rājukas were kula-putras (sons of nobles), belonging to the ruling clan, highly specialized for administrative purposes.

Marriage.—Early exogamous marriage outside his own clan but within the same tribe has been customary among the Hindus from hoary antiquity. Exogamous marriage presupposes marriage by capture from the hostile clans. And when the clans are fused into a tribe, it evolves a peaceable marriage settlement through purchase and barter. Romans as a marriage ceremony used to separate the hair of their brides with the point of javelin (*haste cerebris*), a reminiscence of marrying by capture. In Bengal vermillion is placed on the forehead of the bride as a symbol of ownership through blood shed in the process of capturing and the bride has to put on an iron bracelet, an evolved form of hand cuff through which she

was tied to a tree or post to prevent her escape. The Hindu bridegroom goes riding on a horse with a sword by his side and presents a sword to the bride. The Austric father usually selected for his son a bride who must be either his wife's mother's brother's daughter's daughter, or his wife's mother's sister's daughter's daughter (who are outside of his own clan, but within the same tribe) and binding betrothal takes place even before the birth of the girl. Cross cousin marriage is still customary in South India where Austric base is very strong. It seems therefore likely that the Hindus adopted the notorious early marriage customs from the Austrians, with some modifications. Among the Hindus, particularly in Bengal suggestive saucy talks, coquetry and flirtations are still prevalent and freely enjoyingly indulged in between the elder brother's wife and her husband's younger brothers; between the husband and his wife's sisters. Among the Todas all the brothers marry all the sisters. So this flirtatious custom might have originated from the Todas or directly from the Caspian fraternal polyandry and polygyny. Nayar, Cambodian, Bisaya maids had similar ritual defloration (*Tvirandukali* by *Manavalam*) like serpent shrines (*Nagattan Kabu*) as among the Khasis. But even social intercourse and courtesy are customarily forbidden between the wife and her husband's mother's brothers. The taboo indicates that once the maternal uncle enjoyed the conjugal rights over his nephew's wife; this custom prevailed among the Caspian Arattas (Rattis, Reddis). Aryans usually gave their girls in marriage in receipt of gifts. But some time princesses were allowed to select one among their suitors for his excellence in archery. Achaean Penelope promised that whichever of her suitors could bend the great bow of Odysseus and rival his unerring aim in shooting straight an arrow through twelve axe-heads (central handle holes of double-bladed axes) set up in a row, him she would take for her next lord. The Svayanbara system of marriage through the exhibition of archery and through the selection by the maiden was introduced by the Caspians in India. Kaurava (of Kamboja Kuru descent) Devabrata Bhishma abducted Kāsi (Kassite princesses) in their Svayambara ceremony when eldest princess Ambā selected a

Salva (Caspian) prince for his excellence in archery. (MBh. 1. 102). Madra (Manda, a Cimmerian tribe) princess Vijayā chose Sahadeva, also born a Madra princess, brother of Yudhisthira for his excellence in archery. Sāvitrī, daughter of Asvapati (title of kings of Madra and Kekaya) of Madra selected Salva prince Satyavān as her husband, for selection by the maiden Asvapati explained to Nārada was their tribal custom. And Savitri's mother was a Mālavi (Malla—a Caspian tribe ; MBh. 8. 293). Koli (Kuluku) princess Gopā selected in her Svayambara Sākya (Saka) archon's son Gotama (Buddha). Gandharva system of marriage by mutual selection was introduced by the Palae Alpines and Alpines. Marriage by abduction especially of the maidens of a different tribe was prevalent among all primitive races. But the Assyrians generally married the girls of their enemies by capture (Asura) and forced their defeated kings to surrender their princesses in marriage to them as a symbol of their allegiance and submission. Marriage in the royal families in India was often primarily based on dynastic treaty alliances. Caspians, especially the Saka branch of them, practised fraternal polyandry and their sexual morals were loose. Herodotus (4. 104) mentions Scyths (Agathyrses) have their women in common in order that they may all be brothers and that being so nearly related they may feel neither hatred nor envy against each other ; Massagetae marries a wife but all the brothers, relatives and friends use them in common. The same custom prevailed with the Thracians and was practised by Saporogia Kossaks and Gilyaks of eastern Siberia. Strabo (16. 4) says of Arabia that community of goods exists between all the members of the same family, but there is only one master who is always the eldest of the family. They have only one wife between them all and he who can forestall the others enters her apartment first, and enjoys her, after having taken the precaution of placing his staff across the door. They have even commerce with their own mothers. Fraternal polyandry of the ancient Arabs is also attested by Arab writers, particularly Bokhari (6. 127) according to whom the number of polyandrous husbands was not allowed to exceed ten. Besides this, various customs of more modern date, as for example, the passing of the widow

by heritage, to the relatives of the husband, seem to arise from it. In the present day the partial marriages by which the women of Hassimeh Arabs engage themselves for some days of the week only while other days they are free to sell their favours to any one they please strongly resemble the *mot* marriage of the Ancient Arabs by which the conjugal union is only contracted for a fixed time and the woman does not leave home, and her tribe preserves the right it has over her, and her children do not belong to her husband. Captured women often remained common to a group of relatives. The ancient Arab women of Caspian origin not only enjoyed sexual licence and polyandrous unions, they also accompanied their husbands in combats and they prided themselves in making necklaces and bracelets for their ankles with the mutilated noses and ears of their wounded or dead enemies (Ch. Letourneau, - The Evolution of Marriage P. 84-88). Arabian polyandry has been confirmed by Sabian and Minaean inscriptions. Caesar (De bello Gallico) speaks also of the polyandry of the ancient Britons of Caspian origin. "By tens and twelves the husbands have their wives in common, especially brothers with brothers and parents with children". Strabo (4. 4) speaks of the Celtic (mixed Caspian) population of Irene (Ireland), "the men have public commerce with all kinds of women, even with their mothers and sisters". Even in the 16th century Granches (Caspians) of Canary Islands were still polyandrous, but amongst them the husbands did not number more than three, who waited upon them alternately by months. Polyandry existed among the Maoris (Mon-Khmer mixed Caspians) in New Zealand and Marquesas, but restricted to certain noble families only. Among other Polynesians especially in Tahiti and Gilbert Island, sexual morals are very free. In Caucasus region polyandry was practised among certain tribes. It is still practised among the Eskimos, Todas and in Tibet where Caspian factors are betrayed by tall and heavily framed bony people with fair complexion, prominent nose and dolichocephalic heads. The tall Khasas of Dehradun region who show still Caspian traits practise fraternal polyandry. And the married women when they frequent their parental abodes and especially during festivals indulge in free amours. Married

or unmarried daughters even pay off the debts of the parental hospitality by granting the favours of their physical charms to the guests like the Polynesian buxom maidens. Nāgini damsels who were generally of Saka origin are especially endowed in Hindu Myths with voluptuous disposition of seductive manners, ever youthful and charming, fond of music, dancing and amorous sports. Among the Reddis (Arattas = Rattas) it was the custom that relatives of the bridegroom, particularly his cousins, enjoyed conjugal rights over his bride. According to ancient Hellenic legends Oedipus, son of Cadmus of Tyrins (Mycenaenans), married his own mother Jacosta. It is said that women were common to Tyrrinians. Licchavis of Vaisali and Sakyas of Kapilavastu married their own sisters, but adultery was punished. Marriages between brothers and sisters are common among the Maoris. The unions between brother and sister, even son and mother, were practised, by Parni Parthians (14 E. B. Persia). The marriage of half-brothers and sisters was allowed in Athens like the Pitrikanyās in Puranas.

Religion :—The Vedic God Marut has been derived from Amorite national and war god Martu. Martu became gradually transformed into Kassite Maruttas, then Marutu, Marutukku, Maruduk and finally Marduk. The ancient war god of the Romans was *Martis*, a name of planet Mars, corresponding to the Gk. war god (M) Ares (Mars). It is evident that Marut can be traced back to the Indo-Aryan source. It may be also that the Hindu names of the week are of the same source. The ancient Greek names of the week have been found written in Pompeii before its destruction on a wall by a boy who was learning Greek. Gk. Helion (sun) hemera (day) — Skt. Ravi Vāra ; Selenes (the moon) hamera = Soma vāra = monday ; Areos h = Ares — Martis = Mars = Fr. Mardi = Budha vāra ; Hermon h = Hermes = Mercury = Fr. Mercredi = Mongala vāra ; Dios h = Zeus — Fr. Jeudi = Brihaspati vāra ; Aphrodite — Venus = Fr. Vendredi = Sukra vāra ; Kronon h = Saturn = Sani vāra. But Babylonian Shamash = Gk. Helion = Roman sol = Skt. Surya. Sin = Selene = Luna = Soma. Marduk = Ares = Mars = Mangala. Nebu = Hermes = Mercurius = Mangala. Marduk = Zeus = Jupiter = Brihaspati. Ishtar = Aphrodite = Venus = Sukra.

Ninib = Kronos - Saturnus - Sani. The Vedic Indra, god of thunder and lightning, has originated from Khatti weather god Indara which has been invoked even in a treaty with the Egyp. Rameses and inscribed there as Intrj. Centaurus, a southern constellation, whose ascendancy takes place during the summer solstice has been mythologized into the Indra legends. At Arslan Tepe a Khatti basrelief shows a bearded, Khatti god with dagger and club is combating a many headed serpent coiled in the waters. The serpent's open mouth and fangs are thrusting to strike. In Hellenic mythology Hercules crushed Hydra—the sea serpent But Hydra is adjacent to Centaurus in southern hemisphere. Varuna, Ouranos—of the Greeks and the Khatti (v)Aruna—the sea and the heaven, the summer solstitial sky, seems to be Indo-Aryan: Aruna as the heaven and the sea god plays an important part in Khatti myths. In Hindu mythology because the summer solstice is the period of the monsoon, the solstitial sky has been regarded as the reservoir of ocean water and later associated with ocean itself. Nasatya (Avestan Naunghaithya) is of Khatti origin. According to Sidhanta Kaumudi, na satya = asatya; na asatya-Nisatya (not untrue). But the Pegasus legends are Indo-Aryan. Possibly the names of Pegasus and Equulus as Asvins have been coined in India or Iran. Mitra as the winter solstitial sun is of Mitanni origin. And the Mitra cult is found well-developed in Avestan legends. In the Vedas through Mitra is associated with Varuna, it is an unimportant deity. The Hindu god Nārāyana, now represented by ammonite (fossil cephalopod shells) represents the Khatti god Inar (Gk. aner, Skt nara-man). Garura, representing Aquila, is the double-headed eagle (ztkharija) of the Khatti standard. Khatti war god Teshup in conical cap and kelt with right hand raised to throw his club is the Hindu Kesava (a name of Krishna), representing Hercules, a northern constellation. At the time of vernal equinox when Hercules begins to rise in the sky the Khattis celebrated it with joys, merriments and great sexual licence (Hindu Holi). And when after the time of summer solstice (June 21) the Hercules begins to decline, there was another festival (Hindu Ratha Jātrā). Hindu Siva and Sivāni (Hara Pārvati) are based on the Khatti bearded Bāl with a tall

pointed cap on his head holding a trident (*trisula*; Baby. Ramnan with a lightning fork) in his hand, embracing the mother goddess Ikksari (Isvari = Ishtar), representing Gemini (J. K. Frazer-Adonis P. 105, 134). Sometime the mother goddess rides on a lioness (Cybele = Sivāni), and Bāal is attended by a bull (Taurus: Nandi). The worship of Bāal (Bholānātha) and his consort Belit (Mylitta) was attended with great sexual orgies, they being fertility deities. Sexual congress the ancients thought was the best form of worship of the fertility gods. And the women priestesses worshipped the god by sexual congress with priests whom they thought represented the deity. In Babylonia every woman had to submit to sexual union with a stranger at least once in her life, in the temple of Mylitta, and the fee she received was offered to the deity. It seems therefore that religious prostitution originated at a time when marriage did not yet develop as a social institution and women remained as communal property and sexual unions were promiscuous. Bāal was represented by a meteorite stone, and later by a pillar of stone. It appears that Bāal became Cabeiri (Siva), a Phrygian deity. In Macedonia and Beotia (Mycenaeans) it was called *mighty god*, (*megaloī theoi*). The cult included worship of the power of fertility, symbolized by the male organ of generation (14 E. B. Cabeiri). Women personated as goddesses. The priestesses were married women who were required to take an oath that they had regular sexual congress with their husbands (14 E. B. : Mystery). It was later identified with Dionysiac mysteries and orgies. Sabazius (Siva deva) was another Thracian deity, possibly a local variation of Cabeiri. Sabazius was frequently identified with Dionysus and sometime with Zeus. His worship was closely connected with Cybele (Sivāni) and Attis and was mystic in character. His ritual and mysteries (Sacra Savadia = Siva deva) gained a firm footing in Rome during the 2nd century A. D. (14 E. B. Savazius). The symbol of Sabazius was the snake (Skt. Bhujangadhara = Serpentarius = Ophiuchus). Armed female attendants, amazons, guarded the temple entrances of Cybele in whose honor orgiastic rites and revelries were celebrated. Before Scoto-Irish Cail (Kali) a black boar was offered and before Gaia a black lamb. In Ireland Caileac was the mother of Danan (Danaus), gods and peoples (D.A. Mackenzie-Myths. of Crete

P. 68). 'Tis said the soul of mortal man recoiled to view Black Ann's eye, so fierce and wild; features livid blue glared in her visage; whilst the obscene *waist* warm *skins* of human virtue close embraced (C. J. Billson: Country Folklore of Leicester). Irish Shelahnagigs. There was a black statue of Demeter at Phigalia. The German Earth Mother was Nerthu (✓ Nrit—to dance; Nerthu = nartaki = danseuse. Kālī is depicted as dancing on the prostrate body of her consort Siva. Nerthu's consort Freya's image at Upsala was provided with a huge *linga* (cum ingenti priapo). Siva is called Natesvara, Mahānata, great dancer. Siva in India is Bāāl, represented by *lingam*, a phallic stone pillar, and Devadāsīs married to the god (Gk. hirodoulai = temple slaves) are the prototypes of Khatti and Babylonia. In February there was a great festival of Bāāl when Gemini is in the zenith and Virgo at horizon and the Milky Way is in the central position (Siva Chaturdasi). Cybele (Sivāni) was called the Great Mother of the gods (Mater Deum Magna). She was the universal mother (Jagatmatā) of gods and men. She was called the Mountain Mother (Pārvati) for her sanctuaries were almost invariably upon mountains and her companions were lions (Leo) and she rode on her (14 E. B. Great Mother). Human sacrifices were made to her. She was called Virgin (Virgo = Skt. Kumāri) Artemesa (Gk. Artemis) by the Tauric Sakas who sacrificed to her all ship-wrecked Greek prisoners (Herodotus 4. 108). Even Achaean Agammonon's daughter Iphigenia was led before the altar of Artemis to be sacrificed and priest Calchas unsheathed his sacrificial knife. Carthagians sacrificed to her (Tanit) with the fertility symbol of crescent over a reversed disk or a triangle and her consort Bāāl Moloch children in times of emergency and their skulls have been found in her temple at Carthage (N.G.M. April 1924). Sāktas sacrificed prisoners and virgins before the altar of Bhavāni and Kālī. Sakas have introduced the rite of drinking human blood mixed with wine in the human skull before Bhavāni, her consort (Mahākālā of Ujjain) to whom human sacrifices were made. Ancient Germans and Kelts (Livy 23) also used skulls of their enemies as drinking cups. Vedic Nanā (9. 112. 3) as mother is derived from the Kassite mother goddess Nana. Nanā was the goddess of love of the Sakas. Vedic Rudra is of Kassite origin. On the Kassite

boundary stone as in Egy. Dandera there is a winged (Aquila, a northerly neighbour) Centaur drawing a bow (Sagittarius), with a double head, one human and another that of a dog (Canis Major on the opposite side), the animal bull or horse having an erect penis being attacked by a scorpion (Scorpio, a southernly neighbour) and a double tail, one of bull and another of scorpion. From this Kassite god, Asur of the Assyrians, Ahura Mazda of the Zoroastrians and Rudra of the Vedas have been developed. The other figures on Kassite boundary stones are the Goat-fish (Vedic Aja Ekapād = Capricornus), a coiled serpent (female dragon Tiamat = Hydra; Hindu Manasā Egyptian Buto) and a stonepillar with rounded polished top (phallus = Hindū Lingam; R. P. Vol 7. P. 43). Tiamat (Taimātā: Av. I 50.13) a female dragon, goddess of darkness (timira) and chaos elevated one of her broods, Kingu, to be her consort after her husband Apsu was killed by Marduk when she threatened dominating the heaven. Pushan, represented by Auriga, seems to be of Caspian origin: for Pushan has been invoked as mother's second husband and sister's lover (Matur didhishum svasur jārah; 6. 55. 5); and marriage with mother and sister was the custom of the Caspians. Later Pushan became Indo-Aryan, as it is indicated by Gk. Pan and Lat. Faunus. Briges (Bhrigus) and Bessi (Vaisya) maidens were given free sexual licence until their marriage, and chief deities of the Briges and Bessis were Dionysus (*Deva-nata*), god of wine and drinking, Ares (Ari-ndama), Bendis (Bandhyā, Bhārgavi, names of Durgā: Artemis; 14 E. B. Thrace), Scythian Aphrodite was Argimposa (Arjuni = harlot, Pusyā = Sirius, indentified with Isis). Ishtar (representing the Virgo; sometimes also the Venus for which Hindu Isāni is called Tārā = star), called Tammuz (tamas = obscurity of the sun = the winter solstitial sun, whom she rescued from the grip of death, withering of vegetation in the winter, and revived him in the spring) — brother, lover and son. Isis (Virgo) similarly was the sister, wife, mother and daughter of Osiris (winter sun). Isis:—Come thou to thy wife in peace; her heart flatters for thy love. I am thy wife, made as thou art, thy elder sister, soul of her brother. Come thou to us a babe. Thou art as a bull of the two goddesses—come thou child growing in peace, our lord, come thou to two widowed goddesses—Oh child, lord, father Osirs (*The Burden of Isis*). Babon

(from whom baboon has been derived was an Egyptian and Babylonian ape deity like Hindu Hanumāna. Vedic Surya, the sun, is equivalent to Kassite Suriaas. The snake goddess of Crete (Hindu Manasā) has a high headdress of spiral pattern round which a serpent has enfolded itself and apparently its head which is missing produced in front like the uræus in the Egyptian helmets of royalty; another snake is grasped by the head in her right hand and by the tail in the left and its body lies wriggling along her outstretched arms and over her shoulders, forming a band which narrows at her waist and widens out below it. These serpents are of brown colour with purple brown spots. The goddess is attired in bell-shaped skirt, suspended in her wasp waist, and a tight-fitting jacket opens in front to display her ample breasts. A stiff girdle entwines her narrow waist. Her skin is white; her eyes and hair dark (Evan's finding at Knossos). At Palaikastra in Malta Cro-Magnon terracotta figurines with slim waist and highly developed hips dancing round a snake goddess with snake in one hand and dove in other have been found. In a cave at Cogul near Lerida in Spain, a quaint painting depicts several females with wasp-waist and very broad hips dancing round a nude male figure; and a phallus has also been discovered (D.A. Mackenzie—Myth of Crete P. 30). Ge (Vedic Go—Prithivi) was identified with earth snake. The bell-mouthed skirt of Knossos is similar to that of Cro-Magnon women depicted in the Aurignacian caves. Aurignacian hunters were the first using bows and arrows. Waist tightening may have survived from the hunting period. Snake girdles were used in Knossos. Zeus was son and husband of Rhea (Great Mother) as Adonis was lover and son of Aphrodite (a Caspian custom). Bull worship may be traced to the same source. Minotaur the Cretan god had the human body with bull's head, and human sacrifices were offered to it. Danans (Danaus) introduced bull worship in Palestine. Narasimha (Av. Nairiyosangha) is the Khatti bicephalus sphinx, combining the cranium of man and lion found at Carchemish, Theban Sphinx—a winged lion with female bust and the wingless male Sphinx—andro-sphinx—and Shekmet of Egypt. Mycenaeans had the lions gate. A lion's gate has also been found at Boghas kuiew. Khatti Teshup represented Hercules, the wielder of club

on his shoulder (Hindu Gadādhara). He had another name Katap, Teutonic Gudā (shortened form of Gadhādhara), from which Germanic Gott, and English God have been derived. At Ras Sharma, near Beirut, in the state of the Alautes (ancient Luites an allied Khatti clan; Luites also settled in Iranian Luistan) in a 14th century B.C. tomb of bronze age, an image of bronze Teshub (Kesaba) has been unearthed: the god is of proud upright bearing; with his raised hand he is about to hurl his club against a foe; his high conical hat is plated with gold and a beautiful wrought mask of gold covers his face; his body is protected by a silver cuirass; his right arm is adorned with a golden bracelet. Next to it was found an erect nude golden statue holding lotus flowers in each hand. In the soil around these valuable objects lay the polished beads of a necklace of precious stones. In the farthest corner lay an exquisitely beautiful ivory relief carving. Her torso is nude with two fine globular breasts. Her face is charming and seems to smile; delicately it is oval in shape. The nose is long, fine and curved. But the lips are thick. The head is brachycephalic. She has a necklace and she wears a tiara over the wavy ringlets of hair on her head. Her hips are very broad and from which falls a much pleated skirt with many ruffles. In both of her hands she holds aloft ripe ears of barley or wheat; on each side of her is a rampant goat as if to seize the barley ears (Louvre Museum. N. G. M. Oct. 1930).

APPENDIX I

Constellations between 20-30 Longitude

| <i>Month.</i> | <i>East</i> | <i>Meridian</i> | <i>West</i> | <i>North</i> | <i>South</i> |
|---|-------------------|-----------------|-------------------|-----------------|--------------|
| Nov. 15 | Gemini | Pegasus, Pisces | Lyra, Sagittarius | Caseopea, Cetus | |
| Jan. 1 | Cancer | Taurus | Capricornus | Perseus | Orion |
| Feb. 15 | Virgo | Gemini | Pisces | Auriga | Cannis Mi |
| April 1 | Arcturus | Leo | Taurus | Lynx | Hydra |
| May 15 | Hercules | Virgo | Orion | Ursa Major | Centaurus |
| July 1 | Cygnus, Delphinus | Bootes | Cancer, Draco | Scorpio, Aquila | |
| Aug. 15 | Pegasus | Hercules | Virgo | Draco | Sagittarius |
| Oct. 1 | Ares | Cygnus | Serpens | Cepheus | Capricornus |
| Dec. 1 at 7 p.m. = July 15 at 4-50 a.m. = Sept. 21 at 12 p.m. | | | | | |

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Abbreviations :—Rv. = Rigveda : where no sign is given Rv. is indicated ; Vaj = Vajasaneyi Samhitā ; Ts = Taittiriya Samhitā ; AB = Aitareya Brahmana ; MBh = Mahābhārata ; EB = Encyclopaedia Britanica (11 = 11th edition ; 14 = 14th edition) ; N.G.M. = National Geographic Magazine ; R.P. = Records of the Past ; A.R.M. = Arya Manjusri Mulakalpa ; Av. = Atharvaveda ; I.L.N. = Illustrated London News. Rāma + Chāru = Sovan (14,2, 44 ; 1,11,50). Urmilā + Saktipada (12,6,39 ; 28,2,46) = Ratnā (6,10, 43 ; 19,6,50). Amiṃyā + Sukumāra (1,2,41 ; 19,10,47) = Rini (28,12, 42 ; 12,9,49). Pramilā + Gopāla (6,5,44 ; 23,1,51).

Published by B. K. Chakrabarty of Vijayakrishna Brothers, 81, Vivekananda Road, Calcutta. Printed at Sakti Press, 27-3 B, Hari Ghose Street Calcutta by Ajit Kumar Bose, B.A.

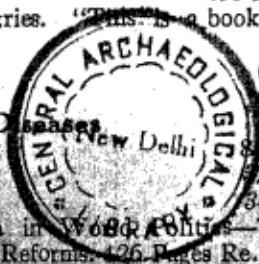
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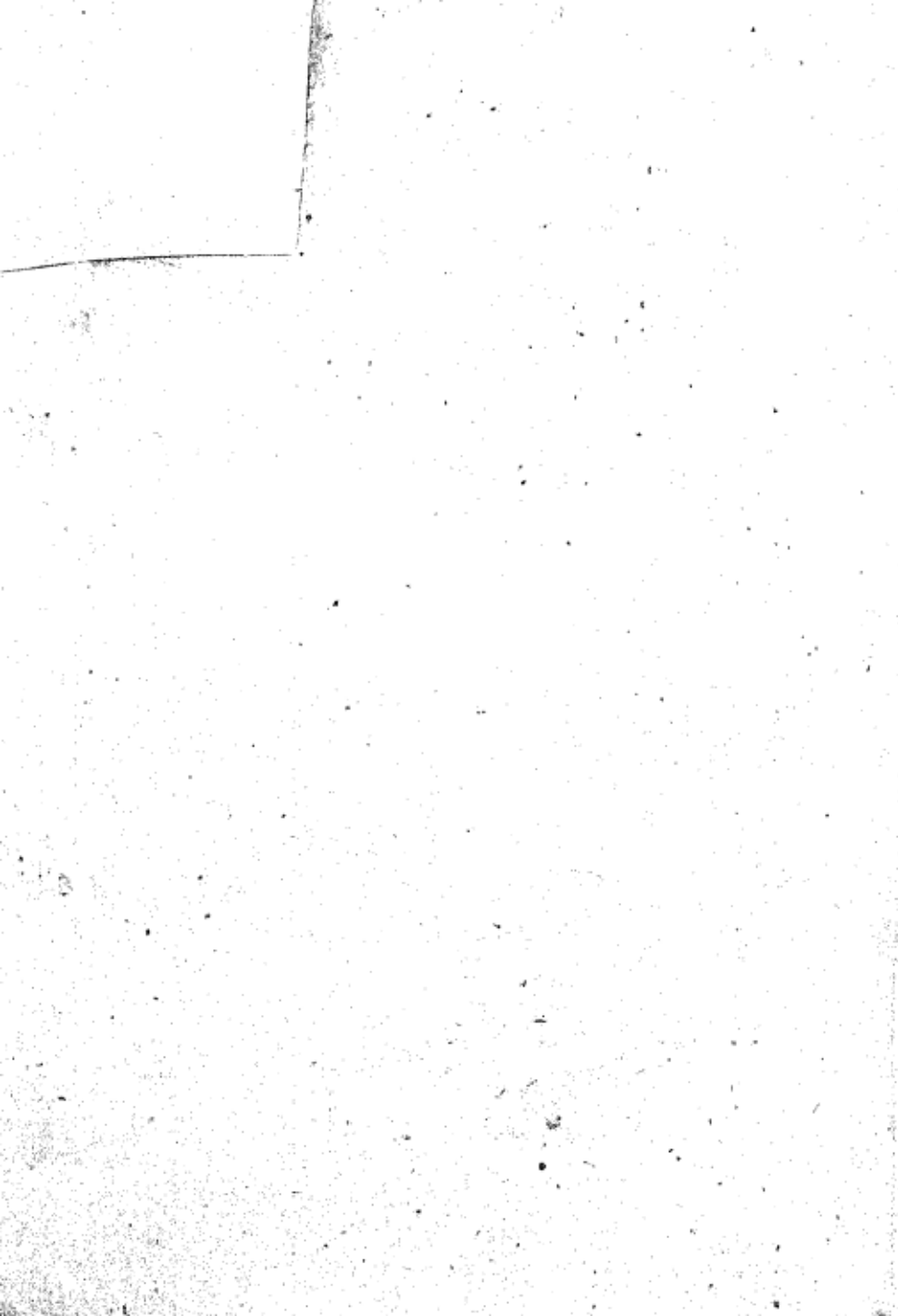
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